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NEW ENGLAND SURGICAL SOCIETY

THE DESIRABILITY OF A SECOND REMOVAL OF THE PROSTATE IN CERTAIN CASES OF CARCINOMA*

BY ARTHUR L. CHUTE, M.D., F.A.C.S.

IN a comparatively few patients in whom, following an operation for removal of a carcinoma of the prostate, there have been symptoms due to a recurrence of the disease, I have done a second removal of such of the obstructing prostate as I could get, by the perineal route, usually with a considerable degree of relief to the patient. Though this is a purely palliative measure and has a relatively limited field of usefulness I believe it merits a definite place in our methods of treatment of this very trying condition.

In my opinion this procedure should be considered in every case where following the removal of a carcinoma of the prostate one has a recurrence of symptoms due to obstruction at the bladder outlet; a condition that is unfortunately common.

It seems possible that we may, in time, come to recognize carcinoma of the prostate in its earlier stages, when it is still confined within the prostatic capsule; under these conditions we may be able to do so complete a removal of the growth, that if we do not entirely eradicate the disease, we may at least prevent its local recurrence at the bladder outlet. I have recently seen a case that gives promise of this, in the person of a patient from whom I removed an adenocarcinomatous prostate in 1920. He now has a very marked metastases in his bones, but his prostate shows no change. He has a transparent urine and no residual. This patient was seen very early; so early that for a time the question of malignancy did not occur to me; later there was a suspicion that seemed sufficient to justify operation. Such an early recognition of this condition, however, will not be the rule and in many instances of carcinoma of the prostate we shall see a local recurrence of the disease.

Two things make it difficult to recognize and consequently to operate upon carcinoma of the prostate in its very early stages. First the fact that the symptoms of this trouble are usually not sufficiently distressing to lead the patient to seek relief during its earlier stages; second, the fact that when the patients do present themselves there is often an oedema that surrounds the carcinomatous gland, which masks its true condition, with the result that its carcinomatous nature may not be recognized until a partial suprapubic removal has been done; perhaps then only because of the pathological report. For these reasons it seems probable that we shall always see local recurrences of carcinoma of the prostate producing obstruction at the bladder outlet; some taking place relatively early, before the patient has extensive metastatic involvement and at a time when it is often possible to give the patient relief without invaliding him.

A local recurrence of prostatic carcinoma will in most instances be indicated by a reappearance of frequent, painful or difficult urination; this is usually accompanied by more or less residual urine; occasionally it will be indicated by the incontinence of overflow. The appearance of bleeding with a recurring obstruction is very suggestive. It is not unusual to have even a very definite obstruction at the bladder outlet, sometimes one that will allow the passage of nothing but a small bougie. In a few instances, in patients who have been under observation, one may find that these obstructive symptoms are accompanied by a definite increase in the size of the prostate as felt by rectum; in most instances, however, no such increase in size will be evident.

A greater or lesser toxicity due to renal back pressure may accompany the recurring obstruction. While toxicity is a clear and imperative indication for immediate relief in cases of benign prostatic obstruction, this may not necessarily be the case with the recurrent prostatic carcinoma. This is for the reason that there is an occasional extension of the disease from a carcinomatous prostate to the bladder with a secondary pinching of the ureters; a condition not met in benign hypertrophy where the obstruction is always at the bladder outlet. Under these circumstances the removal of the obstruction at the bladder outlet would be of

*Read at the Annual Meeting at Manchester, N. H., September 30, 1927.

no help. The only way that I know to determine whether in a given patient, a toxic condition is due to an obstruction at the bladder outlet or to occlusion of the ureters in their intravesical portion, is to insert an inlying catheter; this will be followed by marked improvement, if the obstruction is at the bladder outlet but by no improvement if both ureters are becoming occluded.

A very distressing symptom that is often seen in patients with malignant disease, which had its origin in the prostate, but has extended to the pelvis, is pain in one hip or leg. This pain, in itself is not an indication for a second removal of a carcinomatous prostate; it has been present, together with the obstruction in several instances in which I have done a second removal of a malignant prostate but it has not been improved in the least by operation. It is the same with pain in the sacrum and spine. While pain of this sort is not necessarily a contra-indication to operation, it is not in the least an indication. In fact the only type of pain that one may consider an indication for the removal of a recurrent carcinoma of the prostate is the pain that is due to obstruction at the bladder outlet.

In a considerable proportion of patients with obstruction at the bladder outlet, due to a recurrent carcinoma, we cannot employ routine catheterization as a palliative measure. The obstructing tissue is too dense to permit of this. Therefore, unless we remove the obstruction we have the alternatives of making a suprapubic fistula or having recourse to morphia.

In spite of brilliant exceptions a man with a suprapubic fistula is relatively uncomfortable and is seldom able to do his work. In this connection I will cite the history of a patient of 66 whose case is not included in this series. This man had a suprapubic cystostomy late in 1919. This, as the story was given me, was intended to be the first stage of a two-stage prostatectomy. At the time of the second stage operation the growth was found to be malignant and no attempt made at its removal. After a year, the patient, who was in very good general condition, but with a typical carcinomatous prostate, was extremely tired of his suprapubic tube, in spite of the fact that it was a small one and very nicely arranged. I did for him a perineal removal of his carcinomatous prostate. His suprapubic opening closed and though he went home wearing a urinal, I was told later by a member of his family, that he was able after a short time to give up the use of his urinal and was much happier and less incapacitated than he had been with his suprapubic fistula. He lived 2¾ years after removal of his prostate and closure of his fistula.

Backpressure from a recurrent malignant obstruction presents the same dangers that are inherent to urinary backpressure in general; the use of morphia does nothing to relieve this, it simply cuts short to a certain extent the patient's life,—a thing that most patients, even with recurrent cancer, do not desire. A satisfactory secondary removal of prostatic tissue gives the same freedom from the danger of backpressure and the same freedom from the discomfort of bladder irritation that a suprapubic fistula affords, without the disability which accompanies the latter. The only objection that one can offer is that the operation for perineal removal of the gland is more of a procedure than the introduction of a suprapubic drain; likewise the surgical convalescence is naturally longer. On the other hand it seems to me that its advantages are such as to more than offset its disadvantages.

Perhaps I can best illustrate the advantages of a secondary removal of a carcinomatous prostate by citing the case of a patient of 71 who had been very active and who had many interests. He came to me with obstruction due to the recurrence of a malignant prostate that had been removed suprapubically fifteen months previously. He had just learned the nature of the growth and had been advised that nothing further could be done. He said that if he could have a year or so during which it would be possible for him to work, he could make his life work count for much more than if he had to drop it at that time. A perineal removal of the recurrent growth gave him nearly two years of life (22 months, to be accurate); during a year of this time he attended to business actively and even played golf; later his activities were more limited. Toward the end he spoke several times of how much this time had meant to him in enabling him to round out his life's work. The ability to do this would not have been obtained by the use of morphia nor presumably by the making of a suprapubic fistula which so limits one's activity and comfort, even if it does do away with the danger of backpressure from obstruction at the bladder outlet.

I prefer when doing these recurring carcinomata of the prostate to make use of spinal anesthesia. This sort of anesthesia seems to me to have an advantage whenever there is any urinary backpressure. Whatever sort of anesthesia is used, the patient is put in a moderately exaggerated lithotomy position and if possible, a long prostatic tractor, Geraghty's by preference, is inserted through the urethra. In some instances one is able with this instrument to make the prostate bulge into the perineum a little more than without it; in other cases, the prostate is too firmly fixed to the pelvic wall to allow any particular movement of the gland; in a few cases I have been unable to introduce any tractor. I make use of a curved perineal incision that is just anterior to the mass of the anal sphincter; this incision is carried down

carefully and the rectourethralis muscle identified and cut. The rectum is pushed well back from the prostate until quite a surface of the prostate has been uncovered. To facilitate this separation of the rectum from the prostate I still use a gloved finger in the rectum, which gives me a very accurate idea of its location: in a number of these thin old men the rectum seems to come down a long way on the prostate and this method seems to lessen the probability of serious injury. I have, however, on several occasions gone through the fibers of the muscular wall of the rectum and left nothing but the mucosa but in these instances one or two very fine catgut stitches have been sufficient to prevent a rectourethral fistula. In instances where the first operation was done by the perineal route a second dissection of the perineum will be difficult but in the few instances in which I have met this condition it has been possible to carry out the dissection without opening the rectum.

When a moderate area of the posterior surface of the prostate has been uncovered, I make a cross incision through its capsule and turn back a flap as an extra protection to the rectum. Once this has been done there are two courses that one may follow, depending upon the consistency of the malignant tissue, which varies materially. In some instances one may be able to separate with his finger, introduced into the capsule, the obstructing tissue which may be on either side or behind the bladder outlet or in all three positions. It is quite possible in certain instances to enucleate by this means what proves to be typical carcinomatous tissue. I have found on several occasions typical, adenomatous masses that were easily enucleable, combined with a malignant prostate. The insertion of a Young or Markley tractor through an incision in the prostatic urethra will sometimes help one in carrying out this enucleation. In a considerable proportion of these cases, however, enucleation of any tissue, with the fingers, is impossible and one is forced to dig out or tunnel through the prostatic mass with rongeurs, scissors, a scalpel, or a relatively sharp periosteal elevator which one may use as a knife; the prostatic punch is also very helpful at times. One's object is to remove as much, as one can, of the hard, malignant tissue that surrounds the bladder outlet and interferes with the emptying of the bladder. I have mentioned that one may find in association with a carcinomatous prostate a benign, intravesical mass. Relatively recently I found an almost pedicled, obstructing mass just inside the bladder outlet that was an intravesical extension of a malignant prostate.

Whatever method is used a sufficient amount of tissue should be removed so that one can pass his finger through the bladder outlet. A catheter is then carried from the meatus to the bladder and a tube is also brought out through the perineum, after bringing together with catgut sutures the fibers of the levator. On occasion I insert radium into any suspicious tissue, which must of necessity often be left in an operation of this sort. I am very careful, however, how I use it in any tissue that is on the rectal side as I have seen one or two instances in which, following the too enthusiastic use of radium, the patient has had a rectourethro-perineal fistula.

In going over my cases I have found ten instances in which I have carried out this procedure. I have a feeling that I have done one or two other cases but I am unable to find their records. A study of these cases has brought out some things that I think are of interest. In seven of the cases the first operation had been a suprapubic enucleation. In some instances the nature of the growth was not appreciated before the time of operation. In a few it was suspected. In three instances the primary operation had been a perineal prostatectomy as in these three cases I had felt sure I was dealing with a carcinoma and it has been my experience that, as a rule, I can do a much wider removal of a carcinomatous prostate by the perineal than by the suprapubic route.

The time which elapsed between the time of the primary operation and the secondary removal in this series of cases varied from seven months, in one instance, to ten years in another. In both these cases the primary operation was by the suprapubic route. The one in which the recurrence took place in seven months was done by me and the microscopical examination reported the growth to be carcinoma.

In two patients there had been a very long interval between the original operation, which was not done by me in either instance, and the second operation. In one case, nine years elapsed, in the other, ten years. In neither case was there any record of the microscopical findings at the time of the first operation. The growth which I removed in the nine-year case proved to be adenocarcinoma; that in the ten-year case, carcinoma. In both these instances the growths had the macroscopic appearance of carcinoma. It would be of great interest to know if the carcinomas I removed were recurrent growths as I believed them to be, or growths that bore no relation to the ones that had been removed at the earlier operation, but had developed independently in bits of prostatic tissue that were left at the time of the first operation. In the adenocarcinoma case there was in addition to the malignant mass a typically benign, enucleable mass that was microscopically adenoma. In both these cases the first operation had been a suprapubic one, in which it would have been perfectly possible to have removed fibro-adenomatous masses and to have still left the posterior part of the gland; the

part in which carcinoma arises so commonly.

The operation in seven of these ten patients was done under spinal anesthesia, which seems to me, as I have stated, the anesthesia of choice in every condition where there is urinary back-pressure. In three of these patients some sort of inhalation anesthesia was used.

The microscopical examination of the tissue removed from these ten cases of recurrent prostatic growth has reported carcinoma in six cases and adenocarcinoma in four.

Radium was used in four of these cases; the amount was not stated: but at the time I made use of radium more than at the present, I usually used 1200 milligram hours in cases of this sort and I presume I did in these cases. In three of the four cases the radium was introduced through the incision at the time of operation by means of needles placed wherever I feared I had left malignant tissue. In one case I applied radium through the urethra some time after operation. I had no untoward results from the use of the radium. I am unable, however, to decide how much good it did.

As to the results obtained, one of these ten patients died some forty-two days after operation of embolic pneumonia. Of the nine who left the hospital my notes give results regarding urinary control as good in five patients; in three patients the control was not complete during the day; in one patient the control was poor; he had to wear a urinal. In all but this one patient, however, urinary control was good at night. This allowed these patients to do away during the night with the annoyance that comes from a suprapubic tube and yet to keep dry. Some of these patients, who could keep dry a night, had, however, to wear a urinal during the day and even to have it in position before they stood on their feet.

In closing I would suggest that this palliative procedure gives perhaps the greatest degree of comfort, combined with the greatest range of activity, that it is possible to give in certain cases of recurrent carcinoma of the prostate.

Discussion

John H. Cunningham, M.D., F.A.C.S., Boston: Dr. Chute kindly let me have a copy of his paper, and I have prepared my discussion beforehand which I shall read.

The problem of carcinoma of the prostate has long been a difficult one. There are certain things about this disease, which are more or less settled, and others, particularly in regard to treatment, which remain in debate. Dr. Chute has hit the one great outstanding truth in regard to treatment when he refers to it as a palliative measure.

The chance of treatment being anything but palliative lies in the fact that there is an unfortunate disproportion between the onset of the metastasis and the onset of urinary obstruction. In other words, metastasis usually take place before the urinary obstruction occurs, so that the patient, as a rule, is beyond the possibility of cure.

The most common site of the metastasis is in the nodes about the sacrum, along the spine, and in the pelvis. There is a predilection about metastasis to occur in bones, particularly in the sacrum and spine. Any bone, even the skull, may be the site of metastasis. They often occur in the lung, and I have occasionally seen involvement of the supraclavicular glands. In fact, we may have well-established carcinoma from metastasis in almost any part of the body without the prostate being suspected as the primary site because of the absence of definite urinary symptoms.

Another factor which has been definitely established is that carcinoma and benign prostatic obstruction may exist together.

When the symptoms of obstruction develop, something has to be done to relieve the bladder retention if suffering is severe. If retention is not relieved, it will produce renal and circulatory embarrassment.

The part of this subject which remains in debate is particularly that of treatment. Dr. Chute has been considering one method of treatment, for which he seems to have a decided preference. I infer that he advises the relief of the obstruction by a perineal operation, admitting the inability to remove the disease, even with the use of radium as an adjunct. He has also expressed a preference for secondary perineal operations if the obstruction recurs.

Other authorities advocate the other extreme of doing nothing to the diseased prostate, but to relieve the obstruction by simply establishing a permanent suprapubic opening. Between these two extreme points of view, we have those who advocate a partial removal of the obstruction at the bladder outlet by an intraurethral operation, which destroys the obstruction at the bladder outlet, and the employment of radium to favorably influence the remaining growth.

Others favor the employment of radium, without any operative procedure if the retention is not very distressing, relieving the retention by an indwelling catheter and then regular catheterization if either is possible.

Others believe a suprapubic cystotomy and the employment of radium, introduced into the diseased gland from above or through the perineum to be the best procedure.

As Dr. Chute was kind enough to give me his paper to study before participating in this discussion, I have had opportunity to check up on my results. I am naturally very sorry that I cannot entirely agree with his dicta.

I have come to the conclusion that while we may have an occasional relatively brilliant result, on the whole, the picture of treatment in regard to carcinoma of the prostate is just about

as bad as carcinoma can be in any other part of the body, if not worse.

I find that I have complete information regarding 29 patients *operated upon* during the past 8 years, most of them being done by the procedure which Dr. Chute has been advocating. In most of these, I employed radium as an adjunct. Nineteen of these patients were dead within two years. Ten of these patients are still alive. One, done about a year ago, has just had to have a suprapubic cystotomy for recurrence of the obstruction. In this patient, a more complete operation was done than in most, and there was a more favorable outlook in this case than in most. This patient has been under the care of Dr. Alfred Mitchell of Portland, Me., for many months, and just recently we both decided that a suprapubic cystotomy was the only thing to relieve his distressing bladder symptoms because of recurrent obstruction. Since this has been done, he is very much more comfortable.

There is another patient in the living group of 10, who has been operated on 5 times because of recurrent obstruction. Each time the opening at the bladder outlet was very small and as much of the growth as possible was removed through the perineum. Radium was employed on each occasion by inserting the element into the remaining tissue. The first operation was done in August, 1924. At present he has a permanent perineal sinus.

A few nights ago, I had to operate upon a patient for recurrent obstruction following an operation which I presume was similar to that which Dr. Chute has been describing. This operation was done by one of the members of this Society, somewhat over a year ago. The opening at the bladder outlet was about 6F. and the obstruction was due to very dense carcinomatous tissue. This was cut away and the patient now has a large perineal tube. Radium element was inserted into the remaining tissue. This patient, had, at the time of his recurrent obstruction, a perineal sinus, which had persisted from the time of his original operation.

I have had a few cases who, through a perineal operation, have done far better than could have been expected and are not unlike those favorable cases mentioned by Dr. Chute. On the whole, however, recurrence has been the rule if they lived long enough. Few have been free from bladder symptoms, and in none have I felt that we have eliminated the disease locally.

During the past four years I have treated 14 patients with radium *without operation,* employing intermittent catheterization and indwelling catheter at various times, usually at the time of the radium treatment. Most of these have died within two years. An elderly gentleman, with metastases in most of the bones of his body, and involving the lungs, had a residual urine of 8 oz. when first seen. He was being treated for osteoarthritis for months before the urinary symptoms developed sufficiently to attract the physician's attention. By employing an indwelling catheter and implanting radium element into the diseased tissues through the perineum there resulted an overcoming of the residual urine. The gland, which was large and invaded by a typical carcinoma, was reduced in size by this procedure and the urinary symptoms were greatly improved during the remaining 8 months which he lived. There was no evident local recurrence of the growth and there was no recurrence of the residual urine. This case, however, stands out in glaring contrast to the others, particularly in regard to overcoming the residual urine, which has been little influenced by the employment of radium, in most of my cases.

A most important article on the subject of carcinoma of the prostate has been recently published by the Mayo Clinic. Dr. Bumpus in this article studies the results of treatment in 1000 cases in which the various methods to which I referred were employed. His conclusions leave little doubt that simple suprapubic drainage give the best results. He points out that the average duration of life by this procedure is nearly twice that of any other and the conclusions reached are that there is no form of treatment which is so free from risk and which lessens suffering more or produces a longer duration of life than simple suprapubic cystotomy.

With this I am in accord. As distressing as the disease has been in my patients, upon whom I have done a suprapubic drainage, with or without the employment of radium through the suprapubic wound at the time that drainage was established, the duration of life and the degree of comfort have been better than by any other procedure which I have employed.

Of course, it is very tempting to try to eliminate the local disease by an operative procedure, but all the evidence that I am able to acquire leads me to the belief that this is quite impossible. In my hands, even those cases who have had quite satisfactory results from an operative procedure have had bladder symptoms, which have been far more distressing than those upon whom I have done a suprapubic drainage; occasionally a persistent sinus has resulted, and secondary operations for the recurrence of obstruction, as Dr. Chute told us, have often been necessary. In my opinion, the inconvenience of the suprapubic tube, while considerable, is the lesser of the evils.

At the moment, my feeling is that an operative procedure, other than simple suprapubic cystotomy, should not be employed for the relief of the obstruction dependent upon carcinoma of the prostate unless associated with benign hypertrophy or in those cases in which the diagnosis between a fibrous prostate and carcinoma cannot be clearly determined.

I believe that the group of patients with carcinoma of the prostate, associated with little obstruction, is best handled with regular catheterization, if possible, and radiation of the gland by the introduction of the element on rods through the perineum. If the residual urine increases or bladder symptoms become distressing, or when catheterization is impossible, a suprapubic cystotomy should be done.

There is the other group, which is by far the larger, in which the local disease is much advanced, which patients have no chance of being cured by any procedure and in which group I believe suprapubic cystotomy, with or without the employment of radium at the time this procedure is carried out will give the best results in regard to comfort for the remainder of the individual's existence, the expectancy of which can hardly be more than two years. In this group we can not expect to accomplish more than the relief of bladder distress.

One thing can be said in regard to the employment of radium, even in these hopeless cases. There is probably nothing more distressing than the knowledge that one has carcinoma, and if the physician assumes that there is nothing which can be done in the way of treatment, this mental depression must necessarily be accentuated. We are all familiar with the attitude of carcinomatous patients. Most individuals have some knowledge of radium from the popular expressions as to its wonders of accomplishment. I cannot help but feel that its employment is a very important therapeutic crutch, upon which some of our patients can lean with hope. In fact, today radium seems to be the only therapeutic crutch, outside of opium, that we can offer during the declining period which is so distressing, particularly to the patient, and incidentally, to the physician as well.

In some of my patients, it has favorably influenced the growth, reducing its size and changing its character, and in relieving pain and bladder distress. In but a few patients has it improved retention and in none has it produced a local cure. In most, however, it has been the false ray of hope which has been very helpful to all concerned.

While I would like to agree in toto with Dr. Chute's point of view, I can only do so in part. I have come to classify the treatment largely upon the condition of the patient when first observed. A brief summary of my views is as follows:

The group of patients with a small residual urine, which can be catheterized, should be put in the hospital on constant drainage and radium introduced into the growth through the perineum, giving at least 2000 mgm. hours at the initial dose. Subsequently, radiation should be carried on through the rectum and occasionally through the urethra and intravesically. If the residual urine increases or the bladder distress becomes severe, an intra-urethral operation, cutting away the obstruction at the bladder outlet may be of service, combined with further radiation through the perineum. When this is not feasible, a suprapubic cystotomy should be done, with or without the introduction of radium into the growth from above at the time this procedure is carried out.

Group two is the group in which such palliative measures as catheterization and an intra-urethral operation are impossible because of the obstructive nature of the growth or because the patient's general condition is such that the expectancy of life is short. This group, which forms the largest number of my patients, had best have a suprapubic cystotomy and radium employed through the suprapubic wound and later through the perineum, or through the rectum, and possibly further radiation through the perineum and rectum.

The third group is one in which I am in accord with Dr. Chute. This group is formed by those patients in whom it is not possible to make a positive diagnosis of carcinoma by the usual methods of investigation. The differentiation between a fibrous prostate, or a large benign growth with possible co-existence of carcinoma, I am inclined to subject to a perineal operation. If the disease proves to be carcinoma, I think the best we can do is to employ radium in the hope of delaying recurrence, and in so doing to supply to the patient, what I choose to term, a therapeutic crutch, until we no longer need to provide any such subterfuge.

R. F. O'Neil, M.D., F.A.C.S., Boston: Dr. Chute's papers are always very suggestive and this particular one follows the rule. I shall not attempt to discuss the subject of prostatic carcinoma—as I understood his paper dealt only with a certain number of cases of recurrence and with a method of giving relief to these unfortunates. If he can do a perineal operation and enable these men to pass urine through the urethra even with day-time incontinence, he has done a great deal for them. There is no argument but that a patient who voids through the natural channels, even if more or less incontinent, is comparatively more comfortable and more easily taken care of than if he had any type of fistula. A perineal operation such as he describes particularly if a secondary one, is not easy and is only for the skilled perineal operator.

I have seen no success in treating these cases either with radium or deep X-ray. As to suprapubic cystotomy, I do not take quite the gloomy view of this procedure that Dr. Chute does. True, they require care and the services of a nurse or an attendant. I have had a number of patients who have "carried on" for some time comparatively comfortably under this

method. Unfortunately there is an occasional case which is not entirely relieved by suprapubic cystotomy and that at times has an annoying dribbling from the urethra necessitating the wearing of a urinal.

Of course the type of pain so commonly seen radiating down the back of the legs is not relieved by any kind of drainage. As to the length of time these cases have lived—I do not see that he has gained anything over the cases that have been drained suprapubically—but I should think they had lived in greater comfort. Particularly in the case of the man who was able to complete his life's work.

Of course the co-existence of carcinoma and adenoma has long been recognized, and one may remove the obstructing lobes suprapubically—to have the patient later develop carcinoma in the posterior portion of the prostate. This is the type of case in which Dr. Chute recommends attempt at relief by a perineal operation rather than by suprapubic drainage.

DR. CHUTE, Boston, (closing): I am glad to see that Dr. Cunningham has shown that there are two sides to the treatment of local recurrences of carcinoma of the prostate. However, I believe that a part of his discussion, as I understood it, was on the primary treatment of carcinoma of the prostate rather than on local recurrences. In some of the cases in which I have done a secondary removal I think it would have been quite impossible to introduce radium except by making a suprapubic incision or by introducing it blindly through the perineum which procedure, so far as I know, is no longer endorsed.

ORIGINAL ARTICLES

AURICULAR FIBRILLATION IN AN APPARENTLY NORMAL HEART*

BY WILLIAM D. REID, M.D.

AURICULAR FIBRILLATION was formerly believed to be a permanent arrhythmia of the heart, as is evidenced by the now obsolete nomenclature *pulsus irregularis perpetuus*. More recently, however, it has been recognized that fibrillation of the auricles may occur in a transient form. If the condition is at all persistent, its presence is generally considered reliable ground on which to predicate important damage to the myocardium.

FIGURE 1. Single leads from an electrocardiogram before, and two during, quinidine therapy (dates marked on prints). Auricular fibrillation is present in all. Jan. 17, 1927. Before quinidine: auricular rate 440±, ventricular rate 90-103. Jan. 24, 1927, 2 P. M. Auricular rate 375±, ventricular rate 89-100. Jan. 24, 1927, 5 P. M. Auricular rate ?, ventricular rate 100-114.

In view of the above-mentioned belief, that the presence of persistent auricular fibrillation indicates definite organic disease of the heart, the following case report becomes of interest.

CASE REPORT

A married man, aged thirty-two years, business executive, was seen Jan. 17, 1927. His chief complaints were moderate dyspnoea, palpitation, undue fatiguability, and a sensation of being "cold all the time".

He dated his present illness from the day of an automobile accident in May, 1924. Following this accident he carried a seriously injured woman up three flights of stairs without untoward symptoms; this was about 2 P. M. On going to bed about 8 P. M. that night, he first noted that his heart was beating very irregularly. On the advice of a physician he remained in bed the following ten days, and "took things easy" during the next four months. The heart action appeared to be fairly regular if he was quiet but quite irregular if he "did anything".

In April, 1925, he had an attack of the "flu"; there was a temperature of 103° for three days. The patient remained in bed one week and "took it easy" for the next two weeks. Since then he has never been able to spend a full day at his work; he had been unable to work continuously for more than two hours and then was obliged to return home for rest throughout the remainder of the day. At times he has been

*From the Evans Memorial.

confined to bed continuously for six weeks. He often wakes twice in a night with the sensation of fighting for breath.

He has taken tincture of digitalis in a dosage of 10 drops t.i.d. for periods of four to five months. Occasionally the dose has been increased to 15 drops t.i.d., but never more. Quinidine sulphate in 5-grain capsules three to four times per day has been given in courses of four, three, and two weeks, off and on for a year. The above dose has never been exceeded. The patient is unaware of any benefit or harm from these drugs and has been told that neither was of benefit to him.

The patient was seen in consultation by a well-known internist (both patient and his physicians reside outside of Massachusetts). He states that as a result of the failure to improve under treatment he has been told that his heart would never again beat normally. Also, under pressure from the patient, his personal physician in January, 1927, gave him an opinion that his probable duration of life was about six more years.

His past history disclosed that he had had scarlet fever followed by quinsy sore throat at the age of fourteen years with complete recovery. Tonsillectomy had been performed three months later. At the age of twenty-four he was operated upon for gastric ulcer, and has had no stomach symptoms since.

Except for the foregoing he has enjoyed good health. He has considered himself athletic, has played some baseball, and until the present illness, much tennis without ill effects. Most of his vacations have been spent engaged in stream fishing. He denies any form of rheumatism, chorea, or other infection.

His present weight is 170 lbs., a few years ago, he weighed about 200 lbs., his maximal weight; height 5 ft., 11 in.

Physical examination showed the heart apex impulse barely palpable in the fifth interspace at the left nipple line; the borders of percussion dullness within normal limits; no murmurs were detected. The rhythm was irregularly irregular, the rate 100±. The blood pressure (majority of sounds) was systolic 104; diastolic 72. There was no edema.

Physical examination was otherwise normal.

Opinion: "The heart shows the rhythm of auricular fibrillation; otherwise there is no evidence of abnormality of heart. It is my opinion that Mr. ——— should do pretty well, as far as his heart is concerned, if effective treatment is instituted."

Subsequent History: The patient was submitted to the week of intensive study at the Evans Memorial. All laboratory examinations gave normal findings save for the rate of the basal metabolism which was —14%. He was 11% underweight. The conclusion was reached that there was no real evidence of endocrine disorder.

Roentgen examination of the teeth, skull, sella turcica and sinuses showed no abnormalities.

Roentgen mensuration of the heart and aorta gave the following: Total diameter of the aorta 5 cm.; right median 7 cm.; left median 7.5 cm.; total diameter 14.5 cm.; right oblique 8 cm.; left oblique, 6 cm.; total oblique diameter 14 cm.; length 16.5 cm. Axis is 50 degrees. Total internal diameter of chest 32 cm. Heart not generally enlarged; right side somewhat dilated.

Electrocardiogram, Jan. 17, 1927, showed auricular fibrillation, ventricular rate 90-103, auricular rate 440±, QRS = 0.06 second; axis normal.

Treatment. Jan. 22, 1927, the patient was given digitalis leaf 0.4 gm (6 gr) twice. The following morning he was surprised to note that he could ascend stairs with less shortness of breath than at any time since beginning of illness in 1924.

Jan. 24 quinidine sulphate in a dosage of 0.4 gm (6 gr) was given every two hours from 8 A. M. until 4 P. M., when a final dose of 0.8 gm. (12 gr.) was administered. At 8.15 P. M. that evening the resident physician detected the presence of normal rhythm. This was confirmed by an electrocardiogram taken the morning of Jan. 25. Quinidine was permanently discontinued two days later because of mildly toxic symptoms.

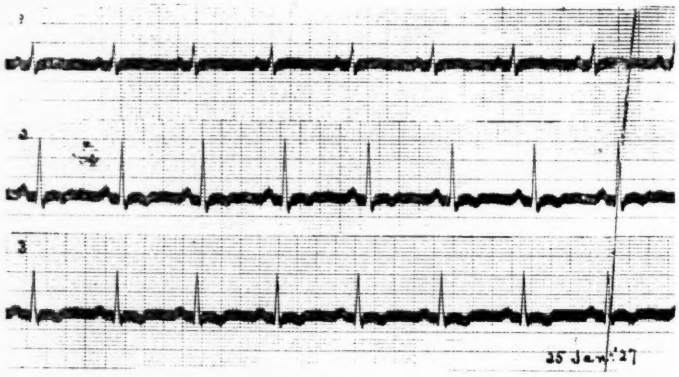

FIGURE 2. Normal rhythm following quinidine therapy. The depression of the T waves is doubtless due to the action of digitalis.

Roentgen mensuration Jan. 27 gave the following: "Aorta 5 cm.; right median 6 cm.; left median 8 cm.; total diameter of heart 14 cm.; right oblique 8 cm.; left oblique 5 cm.; total oblique 13 cm.; length of heart 15 cm.; axis 50 degrees. Heart within normal limits".

The patient returned to his home and gradually has resumed his work. Now he works the full eight hours a day. There was considerable delay in getting over the lack of physical fitness; the auricular fibrillation has not recurred to date (Oct. 15, 1927).

COMMENT

The patient had been told by his physician that auricular fibrillation has been present since the day of the automobile accident in May, 1924; the condition has been more incapacitating since the attack of the "flu" in April, 1925. It is obvious that the digitalis was prescribed in inadequate dosage; the fact that drops average but one-third to one-half of the same number of minims appear to have been forgotten. Based upon this fact, the maximal amount received in a single day can be estimated to be between 15 and 22.5 minims, which is less than the probable

amount that a 170-lb. individual would dispose of during twenty-four hours. The 0.8 gm. (12 gr.) given Jan. 22, 1927, had a definite therapeutic effect without signs of toxicity.

Since there was no evidence of abnormality in the heart other than the presence of auricular fibrillation, it seemed especially indicated that a vigorous effort to restore normal rhythm should be made. It was intended to administer courses of quinidine in increasing doses until the arrhythmia was abolished or the patient showed toxic effects of a degree to indicate that more of the drug would be unsafe; happily success was achieved the first day after the administration of a total of 2.4 gm. (36 gr.).

The decrease in the size of the heart shadow in the roentgen examination was due to the removal of the dilatation of the auricles on the restoration of the normal rhythm.

Although no lesion is constantly associated with auricular fibrillation, it is known that as a rule there are scattered foci of chronic inflammation, and that these tend to congregate in the auricle. In some hearts these lesions are not found[1]. As far as I am aware, there is little in the literature to indicate that auricular fibrillation of persistent type occurs in a heart that is clinically normal. This case record is published, therefore, to emphasize the fact that sometimes auricular fibrillation persisting for many years may occur in a heart that is clinically normal.

SUMMARY

A case is reported of a young man whose heart appeared to be clinically normal save for the presence of auricular fibrillation, which persisted for two years and eight months.

Normal rhythm was promptly restored by the administration of quinidine sulphate. There has been no return of the auricular fibrillation since its disappearance ten months ago.

REFERENCE

1 Mackenzie, I.: The Excitatory and Connecting Muscular System of the Heart (A Study in Comparative Anatomy). Trans. Internat. Cong. Med., London, 1913, Section III, Part 1, p. 121.

CONVALESCENCE AND BOSTON

BY JOHN BRYANT, M.D.

I. HISTORICAL.

1) London began organized convalescent care in 1840, with the founding of the Metropolitan Convalescent Institution of London. This voluntary organization now maintains in several institutions, both in the country and at the seashore, over 600 of London's total of 1,000 and more convalescent beds.

2) Paris began organized convalescent care in 1640. In 1857, Napoleon III founded at Vésinet, a 400 bed convalescent hospital for the women of Paris, and at Vincennes, a 600 bed convalescent hospital for the men of Paris. In the seventy years since 1857, these great municipal institutions have given an average of twenty-one days of country convalescent care to each one of a total of over 1,000,000 patients. The patients were in all cases transported from the city hospitals of Paris to the country for this convalescent care; and on completion of their recovery from illness in the country, they were returned to Paris, all costs of transportation being paid by the hospital system of Paris.

3) New York recognized the necessity for convalescent care in 1801. In 1915, its 300 bed Burke Foundation was opened, which has already cared for some 70,000 convalescents from New York City. New York has over 30,000 acute hospital beds and a total of over 3,000 convalescent beds. New York thus meets the accepted standard minimum ratio of one convalescent bed to every ten acute beds; and New York is constantly planning additions to its equipment of country convalescent beds. New York is further planning to include in its great new Medical Center, a new type of convalescent hospital teaching unit.

II. PRACTICAL.

1) Cleveland and New York have officially declared that adequate provision for the care of convalescence is a factor indispensable to the successful completion of any modern comprehensive community health program.

2) Many of the larger cities in the United States have, within the last five years, begun to plan actively for the better care of their convalescent patients.

3) All information which (proven in practice) is essential to community progress in convalescent care is available on request through the Burke Foundation at White Plains, N. Y.

Also, there is recently, and for the first time, available within the covers of a single illustrated volume of reasonable size an historical and practical survey of work and progress in the field of Convalescence. This volume* is published by the Sturgis Fund of the Burke Foundation, as an aid and guide to those who may desire to learn what has been and what may be done to improve the quality of the treatment which has been and is being given to patients who are convalescent.

4) A reasonable city planning basis for convalescent care is a minimum of one convalescent bed to every ten acute beds, with the convalescent institution providing acreage to the extent of about one-quarter acre of land (including building sites) per convalescent patient.

*Bryant, John: Convalescence, Historical and Practical, N. Y., The Sturgis Fund of the Burke Foundation, 1927.

5) Larger institutions have been proven more efficient than small Homes, not only financially, but as producers of the desired degree of improvement in the health of the convalescent patients cared for.

There will always be a place for the well-conducted smaller Convalescent Homes, but the mainstay in community convalescent planning will prove to be the larger and better organized Convalescent Hospitals.

* The Burke Foundation is today recognized as a world model for such larger hospitals for convalescents.

III. BOSTON.

Boston has not less than 7,500 acute beds and should keep filled not less than 750 beds for convalescents. Of this minimum of 750 convalescent beds, about 200 should be for adul women, and 100 for adult men; this is exclusiv of special groupings, as mothers with infants, and adolescents. Such a nucleus of 300 beds for adult convalescents should be located in one or more large institutions.

It would be advantageous if such a nucleus of 300 adult convalescent beds for Boston should be divided between (a) a modern country convalescent branch of the City Hospital, and (b) an independent unit which, for present purposes, might be referred to as the "New England Foundation for Convalescence".

The Boston City Hospital, with its acute population now totalling some 1,500 and soon to reach toward 2,000, should keep filled an adult country convalescent institution of 150 beds (10% of the total of acute beds); approximately 100 of these beds should be for women, and 50 for men.

The other half of the 300 bed minimum requirement necessary for the proper care of the convalescent adults from Boston's acute hospitals could well be located in an institution for which the name "New England Foundation for Convalescence" has been suggested. This institution should be built to accommodate about 100 women and 50 men, with the plans based upon a probable expansion toward a total of 300 to 400 beds. It should be located on a plot of 80 to 100 acres, with a gently rolling southerly or southwesterly exposure. Preferably, it should be within a distance of one-half hour, but certainly it must be located within a distance of one hour, of travel by motor bus from its City Admission Office.

The City Admission Office would be the immediate point of contact between the country institution and its city sending sources. New patients from the various sources would be assembled at the City Admission Office for transportation to the country; and recovered patients would be returned from the country for discharge, social service contacts, hospital follow-up, etc., through the same Admission Office, which should function not only thus, but as a center of activity in the wider field of follow-up and chronic medicine,—a whole field of medical work that now drifts with too little or no organized and developing oversight.

The proposed New England Foundation for Convalescence should receive patients from all sources other than the Boston City Hospital, which should have its own convalescent hospital.

Would the acute hospitals of Boston take advantage of the facilities that such a country convalescent institution could offer them? There is sound precedent for the support of an affirmative reply.

Hospitals, insurance companies, and other such sources should, in the coöperative English manner, be able to "rent" convalescent beds in the proposed New England Foundation for Convalescence; this would be easily accomplished through the simple process of paying the going cost per capita per day for bed space occupied by patients sent that they might obtain the advantages of skilled country convalescent care. This rational system results in a higher development of convalescent care at a lower cost to the smaller sending hospitals and other sources.

Such a convalescent institution, which could be built and maintained at less than half the cost per bed involved in present-day construction and maintenance of the highly organized acute hospitals would accept three types of patients, as follows:

a) The usual post-medical and post-surgical cases discharged from the acute hospitals as convalescent.

b) "Preventive" cases, (perhaps coming directly from their own homes, or through outpatient services) which, through such preventive convalescent care, averaging from two to four weeks of time, might expect to avoid the serious breakdowns that so often necessitate many weeks, if not months, of absence from daily work.

c) "Holding" cases, as cardiacs etc., which, by occasionally repeated periods of convalescent care, may be held at a level of perhaps semi-self-supporting ability, thus retarding, if not indefinitely postponing, the appearance of a degree of physical decompensation which necessitates permanent care, institutional or otherwise.

Boston, as the medical center of New England, should, and perhaps in large measure does, set the medical standards for New England. This being the case, it is up to Boston to demonstrate to the rest of New England an efficient method of caring for convalescent patients. For this purpose, no other method yet available even gives promise of approaching, in degree of demonstrable satisfaction, the results obtainable through a duplication of the Burke Foundation in New York.

The Burke Foundation is delivering results every day, in the way of restoration of exacutely ill and half-well patients to a reasonable degree of health; and this, often, in spite of an unpromising outlook at the time of the patient's arrival in White Plains. Also, the opportunity for country life and the gains in physical health are only the more obvious benefits to which its patients testify. For example, many graduates of this institution for health record with gratitude their appreciation of self-support gained through experience in practical (not dilettante) occupational therapy; or a healthier mental outlook acquired through skillfully applied mental hygiene; or the better practical personal habits, as diet, attained as a result of personal experience with the common-sense hospital routine, and through the frequent educational talks by the hospital staff on subjects hygienic.

In parenthesis, it is important to note that, in contrast to the usual point of view upon the segregation of the sexes, the Burke Foundation has demonstrated that a reasonable and controlled mixing of the sexes, to an extent which in some measure approximates the normal in civil life, may be a distinct and positive aid to individual morale and a healthy outlook on life, not only immediately, but for long after the patient leaves the hospital.

Boston today has less than 100 convalescent beds for adults, none of which are in large or modern convalescent institutions.

Boston today, with a population of nearly 2,000,000, has no convalescent beds for mothers with infants.

Metropolitan Boston today has a grand total of 17 convalescent beds for adult men. These 17 beds are reserved for men from a total of 45 beds available for adults at the Jewish Frauen Verein Convalescent Home.

Here, as in other cities, is practical evidence that the natural perspicacity of the Jewish people results in their being among the first of the groups in any given community to plan practically for adequate convalescent care, upon the sound economic basis that such care is a matter of vital importance to the fundamental problem of maintaining for the individual an adequate measure of wage-earning health.

By way of contrast, one may pause to compare the flourishing city of Boston of 1927, which supports not a single bed for convalescent mothers with infants and has a total of but 17 adult male convalescent beds (located in a small Jewish Convalescent Home for Women), with the Paris of 1860. Seventy years ago, when Paris was perhaps not so enormously more populous than the vigorous Metropolitan Boston of today, Paris had in operation and kept filled a total of nearly 400 beds for women, ten per cent. of which were reserved for mothers with infants; and Paris kept filled a total of nearly 600 beds for adult men.

Boston's present dismally small total of adult convalescent beds was but 60% utilized in 1926.

The convalescent situation here, to be sure, is not stationary. It has been changing, but distinctly and consistently for the worse, for Boston now has nearly 100 less convalescent beds than in 1914.

Boston, even should she wish to do otherwise, is therefore forced to keep her convalescent patients, too long and to their detriment, in acute hospital beds, at the excessive cost for this type of care of $4.00 to $6.00 per day. This uneconomic arrangement is necessitated by the existing lack of organized modern facilities for convalescent care, in which maintenance should not exceed $2.00 per capita per day.

Boston may be no worse off in this regard than some other cities which are not yet awake to the significance of adequate convalescent care. but if Boston is only equally backward in this regard, Boston fills at any given time, as proven in other backward cities, from 10% to 20% of her total number of expensive acute beds (some 700 plus) with patients who, at half the cost, would be recovering health faster if transferred from the often unpleasant surroundings of an acute hospital ward to the greater peace and quiet of less expensive beds in well organized convalescent hospitals in the country.

Even if only 500 acute beds were thus wrongly occupied, here would be a financial waste exceeding $1,000 to $2,000 per day in maintenance cost; and this, multiplying to a wastage of $300,000 to $400,000 per year, should be an item worthy of the serious attention of those who so generously contribute to the funds of the expensive acute hospitals.

Boston's annual medical bill is approximately $30,000,000, about one-half of which is contributed from private sources. Persons in a position to speak with some authority have estimated that, of the $15,000,000 of annual private contributions, at least $2,000,000 to $3,000,000 are doubtless wasted through inefficient expenditure. An annual total appropriation of $1,000,000 to $2,000,000 per year (less than the probable amount of present annual wastage) would be more than adequate to provide for Boston efficient and model care for its convalescent patients.

Intelligent use of convalescent beds improves the health of the patients, saves considerable amounts of money to the supporters of the expensive acute hospitals, and frees some ten to twenty per cent. of the expensive acute hospital beds to their proper emergency use. Convalescent beds can be provided at less than 50 per cent. of the cost of acute hospital beds. Hence, up to the standard ten per cent. ratio of convalescent beds, it is logical and, equally to the point, it is sound economics to provide convales-

cent beds before adding to any existing equipment of expensive acute hospital beds.

The convalescent situation in Boston, as it is today, does not reflect much credit upon the thoughtful intelligence of this community, for a continuation of the present system of neglect of our convalescent patients can only result in a continuing increase in the number of half-cured persons now being discharged daily without proper convalescent care from our modern acute hospitals; such a continuance must further result in adding ultimately to the number of the chronically infirm or helpless older persons who must be cared for at increased expense over longer periods of time, in an increasing number of Homes for the Aged Poor, or Homes for Incurables.

Boston prides herself upon being in the forefront of medical progress and has recently rated high in health surveys. But Boston lags behind other large cities both in studying the problem of convalescence and in providing adequate modern facilities for convalescent patients. How much longer is this city to be known as a laggard in the fundamentally important matter of adequate convalescent care? Boston is soon (1930) to celebrate her three hundredth anniversary. Might not Boston, to advantage, wake up and bring herself up to date, from the point of view of proper and adequate care of convalescence, by making herself a three-hundredth anniversary present of a modern and comprehensive convalescent organization, thereby saving herself actual expense while incidentally and simultaneously improving the health of her citizens?

Cleveland has stated, after most careful investigation, that the convalescent problem of a community must be considered not by bits and snatches with minor and possibly uncorrelated additions here and there, but by "one central and representative group of persons who will study the whole problem and, with a long-range program in mind, will take each practical step as funds are made available. So far as institutions are concerned, there should be one, rather than many, or rather—a group of related institutions managed as one."

W. S. Thayer (1919), basing his opinion upon his wide observation and experience as Chief Medical Consultant to the A. E. F., stated that apart from the fundamental question of diagnosis, the medical man was confronted by two problems: prophylaxis, and his duty to the patient during convalescence. Thayer pointed out that in wartime the value of convalescent care is put on its proper basis in the reconstruction program. He noted that convalescent camps had proved a valuable factor, with their arrangements for work, play, rest, recreation, and amusement, and further remarked upon the importance of the psychological element in recovery. Thayer also pointed out that "war statistics in regard to the duration of convalescence have shown the need of convalescent departments in connection with large hospitals in which may be carried out every arrangement for the well-considered rehabilitation, mental and physical, of the convalescent patient".

Boston needs a "Burke Foundation" with its own research fund (as the Sturgis Fund of the Burke Foundation) to set the pace in Convalescence both for herself and for New England.

THE ORIGIN OF THE WORD "ANAESTHESIA"*

BY ALBERT H. MILLER, M.D.

THE word Anaesthesia is of Greek derivation and signifies lack of feeling or sensation. In 1718, it was used by J. B. Quistorpius in the title "De Anaesthesia". It first appeared in English in N. Bailey's Dictionary of 1721:—"Anaisthesia, a loss or Defect of Sense, as in such as have the Palsy, or are blasted". The word was not known to Samuel Johnson. It occurred in the various Systems of Nosology which were popular in the latter part of the eighteenth century. In the system of John Mason Good, we find:

"Class IV, Neurotica, Diseases of the Nervous Function.

"Order II, Aesthetica, Affecting the Sensation.

"Genus V, Parapsis, Sense of touch or feeling vitiated or lost.

" 2. Expers. Total insensibility to objects of touch. Anaesthesia. Linn. Cull.

Simplex. Confined locally or generally to the sense of touch; sometimes accompanied with uneasiness.

Stupor. Stupor. Sauv. Linn. Sag.

Tactus imminutus. Darw.

Numbness.

Complicata. Complicated with insensibility in several or all the other senses.

Anaesthesia. Sauv. Sag.

Alternating with paralysis. Heister.

Found also, as a symptom, in apoplexy, catalepsy, epilepsy, syspasia, and syncope."

Parr's Medical Dictionary, 1819, defined "Anaesthesia—Insensibility or loss of feeling, by touch. A resolution of the nerves occasioning a loss of feeling, generally a symptom of palsy, the same as Stupor." This was the definition of a word of little use or importance at the time of the events described in this paper.

The first of the events which led to the present use of the word Anaesthesia, to signify induced insensibility to pain during surgical operations, occurred on the 30th. of September, 1846. On September 30th., 1846, the United States was at

*The President's Address, read at the Fourth Annual Meeting of the Eastern Society of Anesthetists, at Detroit, Michigan. October 3-7. 1927.

war with Mexico. Since August, the invincible Santa Anna had been in command of the Mexican troops, but on September 23rd., he had suffered an overwhelming defeat at Monterey. Word of this battle did not reach New England until October 13th., when the news came to Boston by the magnetic telegraph from New York. At 2 P. M. on September 30th., 1846, the steamship Great Eastern arrived in New York from Liverpool after a voyage of eighteen days. Twenty years later, on its last voyage, this steamship would lay the first successful Atlantic cable. In 1846, two years after its first demonstration, the magnetic telegraph connected the cities of Washington, Baltimore, New York, Buffalo, and Boston. After flashing the news of the arrival of the Great Eastern on September 30th., the magnetic telegraph went out of commission and was silent for forty-eight hours. In 1846, a train left New York for Boston at 5 P. M. every day except Sunday, over the Boston and Providence Railroad. These facts are here mentioned to show that, on September 30th., 1846, the era of rapid communication had commenced but had not made great progress.

In April, 1846, the Smithsonian Institution was organized by Act of Congress. On the 26th. of May, the American Medical Association was organized at a meeting held at New York City. In London, Robert Liston was surgeon to the University Hospital and had become pre-eminent in his profession. He was a Scotchman, tall, of a robust constitution and still in the prime of life. He had performed the operation of lithotomy one hundred and forty times and that of lithotripsy, sixty times.

In Boston, John Collins Warren had early attained professional eminence. He had succeeded his father as Professor of Anatomy at the Harvard Medical School and had been chosen surgeon to the Massachusetts General Hospital three years before its opening, in 1820. He had performed every operation known in his time. His operation for removal of the upper jaw, performed on John Garland, December 4th., 1841, was done in the following manner:

"An incision was carried from the external angle of the eye to the external angle of the mouth. Two flaps were dissected, the left flap to the side of the nose, the cartilage of which was cut through at its attachment; the right flap was dissected from the malar bone, as far as the right branch of the lower jaw; the eye was dissected from the floor of the orbit, elevated and protected; and an incision carried through the soft palate. A small oblong simple saw was applied to the edge of the orbit immediately above the body of the malar bone, across the root of the nasal process of the superior maxillary bone, then through the alveolus of one of the incisor teeth and the solid anterior inferior part of the upper maxillary bone. The bony section was completed by cutting forceps; first through the outside of the orbit, behind the nasal process of the upper maxillary bone, and finally, through the palatine plate of the upper maxillary and palate bones, and extricated from the pterygoid process by a chisel passed between this and the posterior part of the maxillary bone. The operation was completed by a few strokes of the knife. The bleeding was not great. The terminating branches of the internal maxillary were readily secured; and nothing remained but to close the frightful chasm by bringing the soft parts over, and uniting them by two or three sutures."

While Dr. Warren was of a grave and gentle disposition, his steady hand accepted as an inevitable accompaniment to its daily task, the agonizing screams of its victims. Securely bound to the operating table, their struggles to escape were unavailing. In 1839, M. Velpeau had written:—

"To escape pain in surgical operations is a chimera which we are not permitted to look for in our day. A cutting instrument and pain, in operative medicine, are two words which never present themselves, the one without the other, in the minds of patients, and it is necessary for us surgeons to admit their association."

On many achievements outside his professional work, Dr. John Collins Warren has left his imprint. In 1823, he purchased three acres of land across the top of Bunker Hill, scene of the Revolutionary battle. For the next twenty years, he was Chairman of the Bunker Hill Association and was responsible for the laying of the corner stone by General Lafayette, the building of the monument and its dedication by Daniel Webster, in 1843. In 1837, he read a paper before the British Association, in Liverpool, on "The Crania of the Mound Indians of North America as compared with the Crania of the South American Indians of Peru." He had obtained several skulls from the mounds of the mound-builders on the banks of the Ohio. He found a remarkable resemblance between these skulls and those of the ancient Peruvians, showing that the two races, though far apart, with other nations intervening, were of a common origin. In September, 1846, Dr. Warren, at the age of 68, was senior surgeon to the Massachusetts General Hospital, was carrying on his last year as Professor of Anatomy at Harvard Medical School, and in his spare moments, was setting up, in his home on Park Street, the bones of a mastodon, discovered the previous year, which he had purchased. These were the subject of great interest and occupation. Although he would later become the third President of the American Medical Association, in 1846 Dr. Warren was too busy to attend its opening meeting.

Nearby, at his office in Tremont Row, William Thomas Green Morton, aged 27, was practicing the dentistry of the time with some profit but without satisfaction. Four years previously, he had formed a short lived partnership with Horace Wells, who, in 1844, made the unsuccessful attempt to demonstrate painless extraction under nitrous oxide gas before some Harvard students. Morton entered Harvard Medical School in 1844, signing with Dr. Charles A. Jackson, as preceptor and living at the house of

Dr. Augustus A. Gould, one of the visiting physicians of the Massachusetts General Hospital. He witnessed the dramatic failure of his partner, Horace Wells, as a student and as a friend. Morton had invented an improved process for making artificial teeth. He was using this invention with great success but was handicapped by the fact that patients would not submit to the agonizing process of having the roots of their teeth removed. Following the custom of the time, the artificial teeth must be fitted over the decaying roots. If he could find some way to alleviate the agony attending the removal of these roots, fame and fortune awaited him. This was his constant topic of thought and conversation. He considered the work of his former partner, Horace Wells, with nitrous oxide; consulted with his preceptor, Dr. Jackson, in a search for other drugs which might safely produce insensibility to pain; and most of all, was intrigued by the effect of sulphuric ether. In August, a jar of ether had accidentally been spilled on the floor. Morton sopped up some of the ether on his handkerchief and inhaled the vapor. He noted its benumbing effect and said: —"I believe that I could have had a tooth extracted painlessly while in that condition."

On Wednesday, September 30th., 1846, at 9 in the evening, one Eben H. Frost of 42 Prince Street in Boston, applied at Dr. Morton's office in Tremont Row, for relief from a violent tooth ache. He found Dr. Morton in conversation with an assistant, Dr. Hayden, and with Mr. A. G. Tenney of the staff of the *Boston Journal.* Frost stated that he suffered great pain and wished to have a tooth extracted. He was afraid of the operation and asked if he could be mesmerized. Morton replied that he had something better than mesmerism. He seated Frost in the operating chair, selected a forceps, saturated his pocket handkerchief with ether and directed Frost to inhale the vapor. After a few minutes, Frost was lost in sleep. It was dark and Hayden held the lamp while Morton extracted a deeply seated bicuspid tooth. Following an interval of strained attention on the part of Morton and the two witnesses, Frost awoke and saw his tooth lying on the floor. The next day, the *Boston Journal* stated:—

"Last evening, as we were informed by a gentleman who witnessed the operation, an ulcerated tooth was extracted from the mouth of an individual, without giving him the slightest pain. He was put into a kind of sleep, by inhaling a preparation, the effects of which lasted about three quarters of a minute, just long enough to extract the tooth."

The enthusiasm of Dr. Morton over his discovery was boundless. Gone was his vision of countless improved artificial teeth, lost in the wider vision of relief of pain for all humanity. He entirely neglected his dental practice and spent every moment of his time in the search for a supply of pure ether, in experimenting with what he found, and in devising inhalers for its use. The principle of the inhaler which he soon perfected, has been but slightly improved in all the succeeding years. A glass globe was provided with two openings. In one was fitted an inspiratory valve. The other opening was connected to a tube on the side of which was an expiratory valve. At the extremity of the tube was a mouth piece of glass. A sea sponge was placed within the globe and was saturated with liquid ether. The patient's nostrils were compressed by the administrator. As the patient breathed through the mouth piece, the air inspired became charged with ether vapor. His expiration escaped through the expiratory valve. Starting with a cold inhaler, the evaporation of ether was hastened and the dosage increased by the application to the surface of the globe of a towel wet with hot water.

On Monday following the painless extraction of Eben Frost's tooth, Morton called on Dr. John Collins Warren, explained his discovery and asked permission to try it at some operation. In consequence of this visit, he received on Wednesday, October 14th, a note from Dr. C. F. Heywood, House surgeon to the Massachusetts General Hospital. It read:—

"*Dear Sir:* I write at the request of Dr. J. C. Warren, to invite you to be present on Friday morning at 10 o'clock, at the hospital, to administer to a patient who is then to be operated upon the preparation which you have invented to diminish the sensibility to pain.

Yours respectfully. C. F. Heywood,
House surgeon to the General Hospital,
Dr. Morton, Tremont Row, October 14, 1846."

On Friday, October 16th, in the operating room of the Massachusetts General Hospital, the scene was laid for the most far reaching event in the history of medicine. Situated under the central dome of the hospital, the operating room was reached by a long circular flight of ponderous, convict quarried stone steps. On entering the operating room, one noted the operating table and chair, heavily constructed of wood, the cases and table for instruments and the needle cushions holding many needles ready threaded with sutures. On the farther side were rows of benches to accommodate students and spectators. On the morning of October 16th, this operating room was filled with members of the staff of the hospital, who had assembled to witness the success or failure of Dr. Morton in demonstrating his wonderful discovery. The operation, for removal of a tumor of the jaw, was to be performed by Dr. John Collins Warren. At 10 o'clock, Dr. Morton had not appeared and after waiting ten or fifteen minutes longer, Dr. Warren prepared to do the operation without him. Then Morton hurried in with an apology that he had waited for the completion of his inhaler. After speaking a few words with the patient, he fitted the new inhaler to the patient's

face. A few minutes later, on a sign from Morton, Dr. Warren commenced his operation. The patient showed no sign of pain. The struggles and agonizing screams which had attended previous surgical operations, were absent. In the supreme moments of history, as in those of life, language completely fails to express the emotions of those who participate. As the operation progressed, a hush fell upon those present, followed by a period of absolute silence after the operation had been completed. Finally the spell was broken, and, turning to the physicians present, Dr. Warren said, "Gentlemen, This is no humbug." In the evening, at his home on Park street, he made this entry in his journal:—

"Oct. 16.—In the morning, went to the Medical College to make some experiments on the renovation of decayed bones with glue. White glue gives, in some cases, a beautiful appearance, and the black glue gives great strength. Did an interesting operation at the Hospital this morning, while the patient was under the influence of Dr. Morton's preparation to prevent pain. The substance used was sulphuric ether."

On the day following, the *Boston Transcript* said:—

"We understand that Dr. Morton, at the invitation of Dr. Heywood, of the McLean Street Hospital, administered his preparation to produce sleep, yesterday morning, to a man who had a tumor extracted from the neck. Our informant, who conversed with one who witnessed the operation, states that the man, after inhaling the preparation for a few moments, was lost in sleep, giving no symptoms of suffering while Dr. Warren was extracting the tumor. He was totally unconscious of what was going on, till near the close of the operation, (which lasted longer than usual,) when he drew a long sigh. The unconscious state in which the man was, afforded the surgeon an opportunity to perform the operation expeditiously, uninterrupted by any struggles, or shrinking of the patient."

The first notice to the medical profession of Dr. Morton's discovery appeared in the BOSTON MEDICAL AND SURGICAL JOURNAL of October 21st.

"Strange stories are related in the papers of a wonderful preparation, in this city, by administering which, a patient is affected just long enough, and just powerfully enough, to undergo a surgical operation without pain."

On November 9th, Dr. Henry Jacob Bigelow, one of the surgeons of the Massachusetts General Hospital, read before the Boston Society for Medical Improvement a paper entitled, "Insensibility during Surgical Operations produced by Inhalation." This paper was published in the BOSTON MEDICAL AND SURGICAL JOURNAL of November 18th. On November 28th, Dr. Bigelow wrote to Dr. Boott of London describing Dr. Morton's discovery. Although communication was still comparatively slow, ether was administered in London on December 18th. On December 21st, Robert Liston performed his first operations with the aid of ether. He was enthusiastic at the result and said, "In six months no operation will be performed without this preparation." Liston wrote to Dr. Boott:—

"Clifford Street, December 21, 1846.

My Dear Sir:—I tried the ether inhalation to-day in a case of amputation of the thigh, and in another requiring evulsion of both sides of the great toe nail, one of the most painful operations in surgery, and with the most perfect and satisfactory result. It is a great matter to be able to thus destroy sensibility to such an extent, and without, apparently, any bad result. It is a fine thing for operating surgeons, and I thank you most sincerely for the early information you were so kind as to give me of it.

Yours faithfully,

To Dr. Boott. ROBERT LISTON."

"The greatest gift of medical science to humanity" was without a name. It was designated as

Dr. Morton's preparation,
Dr. Morton's discovery,
Etherism,
Ether inhalation,
Ethereal inhalation,
Insensibility in persons requiring surgical operations,

Insensibility during surgical operations produced by inhalation, and by many other terms and phrases.

In November, Dr. Henry J. Bigelow and Dr. Oliver Wendell Holmes met with Dr. Morton at the home of Dr. Augustus A. Gould to decide on a name which might do away with the circumlocution which attended reference to Dr. Morton's discovery. The name chosen at this meeting was "Letheon." The word did not please Dr. Holmes, who at once started search for a more descriptive term. In his copy of Good's Nosology he found the word "Anaesthesia" and on November 21st sent to Dr. Morton the following letter:—

"Boston, Nov. 21st. 1846.

"*My Dear Sir:*—Everybody wants to have a hand in a great discovery. All I will do is to give you a hint or two, as to names, or the name, to be applied to the state produced and the agent.

"The state should, I think, be called 'Anaesthesia.' This signifies insensibility, more particularly (as used by Linnaeus and Cullen) to objects of touch. (See Good—Nosology, p. 259.) The adjective will be "Anaesthetic." Thus we might say, the state of anaesthesia, or the anaesthetic state. The means employed would be properly called the anti-aesthetic agent. Perhaps it might be allowable to say anaesthetic agent, but this admits of question.

"The words, antineuric, aneuric, neuro-leptic, neurolepsia, neuro-etasis, etc., seem too anatomical; whereas the change is a physiological one.

"I would have a name pretty soon, and consult some accomplished scholar, such as President Everett or Dr. Bigelow, senior, before fixing upon a term, which will be repeated by the tongue of every civilized race of mankind. You will mention these words which I suggest for their consideration; but there may be others more appropriate and agreeable.

"Yours, respectfully,

"Dr. Morton." "O. W. HOLMES."

The word "Anaesthesia", which Oliver Wendell Holmes thus suggested and of which he predicted the universal adoption, was not immediately accepted. It was first practically used by Sir James Simpson in an article published in the *Journal of Medical Sciences* in 1847. In a series of papers published during the same year, Simpson also used the words "Anaesthetic" and "Anaesthetist". The terms "Letheon", "Etherism", "Ethereal inhalation", and "Ether inhalation" continued in use until the word "Anaesthesia" was finally adopted and generally used in its present sense. The prediction of Dr. Holmes, that this term would be "repeated by the tongue of every civilized race of mankind", has been amply justified. Despite the comparatively slow means of communication of the time, the rapidity with which Dr. Morton's discovery became known and was put in use, is without parallel in history. On September 30th, 1846, Morton made his first trial of ether to produce insensibility to pain. Sixteen days later, he had perfected an inhaler and a method of efficient administration. On October 16th, he gave a successful demonstration of etherization at the Massachusetts General Hospital. The physicians of the staff of that institution appreciated the value of Dr. Morton's discovery and were unsparing in their efforts to hasten its universal adoption. The news was spread through the daily papers, the medical journals and by personal letters. On December 15th ether was administered in Paris and on December 18th, in London. Six months later, inhalation anaesthesia was known and practiced throughout the civilized world.

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NECROPSIES FOR THE PRACTITIONER*

BY DWIGHT O'HARA, M.D.

THOSE of us who are young enough to recall our impressions of the medical profession prior to our initiation to membership in that vocation may reasonably imagine the outlook held by many of our patients and their families. As I entered the medical school in 1915, I believed most doctors to be jacks in what I have since learned are a great variety of trades. The few specialists with whom my family had come in contact had guessed wrongly on the points at issue, and I held them in no great awe. One day, when a necropsy was to be done, I was surprised that a specialist needed to be called for the operation. A great-uncle of mine, who has now practiced medicine for sixty years, had been his own pathologist (he even used to raise his own *Papaver somniferum*) and I would have been thoroughly satisfied with his examination and verdict. Of course, I now see how juvenile such an outlook is, but I suspect that it is held throughout life by many intelligent people. It was this suspicion which first gave me the temerity to perform necropsies upon my own patients, though I had had no pathological training whatsoever.

If Dr. Mallory chances to read this, he will doubtless recall the day I proudly brought him an adrenal gland that on microscopic examination turned out to be "a specimen of normal pancreas". In generously forgiving my pathological atrocities Dr. Mallory has encouraged me, during the past two years, to take a post-graduate course, which I now propose to recommend to my colleagues. In doing so I am conscious of placing myself in the position of that serious-minded medical student in the dissecting room who named his cadaver Earnest, because a friend remarked to him that he "appeared to be working in dead Earnest". I solemnly affirm, however, that I am very much in earnest on questions concerning the availability, the value and the limitations of post-mortem examinations by the clinician.

The availability of post-mortem examinations in private practice, as in hospital practice, depends entirely upon the enthusiasm of the individual physician. A very high percentage can be had for the asking. One has but to test this statement to find that it is true. The man who says "it can't be done" usually means "it's hard work, and there isn't anything (financial) in it". He might be answered in the words of John Bright: "No faithful workman finds his task a pastime". The fact is, we have allowed ourselves to dramatize the lives of our patients; we have been content to judge them by Victorian standards; we have not acknowledged the development of Mrs. Dollop since the time when George Eliot said that she "became more and more convinced by her own asseveration, that Dr. Lydgate meant to let the people die in the hospital, if not to poison them, for the sake of cutting them up . . ." And yet we do not hesitate to vaunt the wizardry of modern science! Professional apathy is a kind term for those

*Read at a meeting of the Medford Medical Society, September 27, 1927.

who can rationalize the situation into the comment that "it can't be done".

Dr. Frederick C. Smith of Marion, Ohio, has recently taken a shot at this sort of professional apathy. I heartily endorse his statement "that the laity is more appreciative of the need of autopsies than is the medical profession itself"[1], and I would like to take aim at the same bogey. During the past two years I have done fourteen out of eighteen possible necropsies in private practice. Of the four not done, permission was given for one, but an inadvertent lack of coöperation on the part of the undertaker caused me to abandon it. Two of the others I did not ask for because the deaths occurred in outlying districts and on days when I was crammed with work in Boston. The last was a patient whom I had seen but once, and in this case it is likely that permission would not have been given. Inasmuch, however, as it was not asked, I still can say that I have yet to be refused a necropsy in private practice. On my hospital services during the same two-year period seven out of twelve necropsies were secured.

Permission for autopsy is not so easily obtained in hospital as in private practice. The hospital is impersonal; its staff members are often strangers to the family; its machinery tends to be economic rather than educational. It took the nursing profession forty years to find this out, and except where academic affiliations force the hospital to recognize its educational obligations, the medical profession is still reluctant to accept the truth that the best hospitals are the best for the simple reason that they are developing their educational opportunities. I have heard the recent ruling of the American Medical Association, which requires for all approved hospitals a necropsy percentage of ten in 1927, and fifteen in 1928, attacked by the "it can't be done" philosophers; and I can't refrain from again opening fire on them by pointing out that the above seven out of twelve (58 per cent.) permissions were obtained by what may fairly be described as half-hearted efforts.

Returning to the subject of necropsies in private practice, it is evident that the intimate relationship existing between a physician and the family of his private patient is one which greatly facilitates the request for a post-mortem "operation". Dr. Smith, in the article just quoted, has well said that "People appreciate a sincere and earnest effort to get at the bottom of diseases that caused the death of their relatives". Not only is this so, but they take unto themselves unwonted homage in the thought that they are doing something to help others. My practice of making no charge for the necropsies I have done, which I will refer to later, has credited me with a disinterested attitude, and has contributed to expressions of gratitude more expansive than deserved.

My next consideration regards the value of necropsies done by the clinician. The value of those done by a competent pathologist needs no brief; I am now speaking of the value of autopsies done by an incompetent pathologist, and I am admittedly personal in my observations. Another one of the several excellent articles which have appeared this year on the subject is that by Dr. Kenneth M. Lynch, in which he states that "when the performing of autopsies is left to inexperienced assistants, their observations are frequently nil, incorrect or insufficient, their interpretations are apt to be erroneous, the value of the autopsy is lost to a varying degree" etc.[2]. From his point of view as a pathologist Dr. Lynch is absolutely right, but from my point of view as a clinician, a poor necropsy is infinitely better than none at all. To substantiate this opinion I will briefly state a few of the gross secrets which would have been buried with my patients had I not blundered on to them: a purulent pericardial effusion; a diphtheritic bronchitis; a fistula between the gall-bladder and the hepatic flexure of the colon which had given rise to an intractable colitis before death. In a young woman with myelogenous leukemia who had clinically died of either peritonitis or intra-abdominal hemorrhage, the latter condition was found, and the bleeding had apparently come from the rupture, not of one ovarian cyst, but of one in each ovary. We later found that she had succumbed at the time of expected menstruation. A renal calculus was found in a demented old man whose cries of pain in the back had been ascribed to a senile cerebrum—fortunately the morphine had not been spared. A man was in critical condition after bleeding from the rectum for three days. A sketchy, but accurate history of duodenal ulcer of years' duration was obtained. What could be easier? The blood was dark, and undoubtedly came from the chronic ulcer. He was given salt solution, his blood was grouped and preparations were being made for transfusion and laparotomy when he suddenly became very dyspnoeic and died. Necropsy showed a duodenal ulcer, right enough, two centimeters in diameter with a firm fibrous base, but, it had not been bleeding! His colon was full of his life's blood. We never found the bleeding point, though we localized it somewhere between the caecum and the rectum. I am talking of the value of the necropsy to the clinician, but in this case the surgeon was thankful enough when he found what he so narrowly escaped going into. I have previously reported the post-mortem findings in two cases of tumor in the right upper quadrant of the abdomen, with the comment: "Had the clinical suppositions in these two cases been reversed, they would have been brilliant"[3].

For the clinician the fascinating thing about gross pathology is its check upon his interpreta-

tion of clinical findings. This is an indoor sport which the professional pathologist misses. The clinician who relies upon ante-mortem findings for his speculations doesn't know the half of it. He literally buries his mistakes. It is no small part of the value of necropsies to preserve the clinician's humility. A woman in the Out-Patient Department of the Boston City Hospital, last summer, answered by routine question as to the cause of her father's death by saying that "the doctors thought that he had pneumonia, but the embalmer said that it was Bright's disease". Her inflection left no doubt as to what she thought. I started to write her answer into the record in a whimsical spirit, but before I had completed the sentence, the possibilities of the incident dawned on me. It is no light responsibility, this certification of the causes of death. The accuracy of vital statistics now depends upon our clinical suppositions. Of course, our errors neutralize one another to some extent. Those who have had their death certificates returned for alteration because the causes ascribed were not acceptable from the actuarian's point of view will naturally resort to the more frequent use of those diseases which are satisfactorily as well as undeniably fatal. For instance, I am sure that in certain cases "old age" is a legitimate cause of death, but it is not recognized as such, so we please everybody by calling it arteriosclerosis. Thus we ascribe as a cause of death a condition which a patient died *with*, to be sure, but with which, and in spite of which, he had also lived for decades.

We now come to the limitations of necropsies by the clinician. There are many of them, temporal, economic and technical. Foremost, perhaps, are the temporal considerations. In private practice deaths have a way of occurring at the most inopportune times and places. At two o'clock, one winter morning, I and the undertaker made an examination and then the undertaker and I embalmed the body—all by the light of a kerosene lamp. The undertaker is usually anxious to embalm the body as soon as possible and on this particular occasion I had no time to spare on the following morning. It can be readily seen that the practice is essentially one for the younger man, the man in Osler's "dry bread stage", whose "time is now his money". Far from finding the undertakers an obstacle, I have found them a very great help. Their embalming rooms have always been open to me, although I haven't been taken into their lodge as yet. As soon as they learn that you want to do necropsies, they will coöperate in every way, even to assisting and sewing up the incisions. After all, the practitioner's good will is a business asset for them.

The economic limitations are more formidable. A fatal illness and funeral seriously drain the resources of most families and it is a question whether we should do anything to increase this inevitable burden, especially when the major part of the profit accrues to us. Moreover, those families who find themselves in easier circumstances, and are really well able to pay a pathologist's fee, usually resent being asked to do so. While they are naturally interested in our findings, they feel that they are granting us a favor rather than buying from us a service. I have consequently made no charge for my necropsies, although in most instances I have relayed a five or ten dollar fee for the pathologist who does the tissue work. When this charge is explained it is gladly accepted. One thrifty man, whose family patronized Boston specialists, gave me permission with the explicit understanding that no additional expense should be incurred. It is generally believed that certain pathological laboratories are always glad to do outside necropsies for the love of it. Except in cases of destitution they are not, and there is no reason why they should be. Whether the case is of scientific interest or not, the pathologist's fee should be commensurate with that of the physician.

The crux of the situation is that here is a matter the primary importance of which is educational, and it cannot be placed on other than an educational basis. Nowhere does there exist an educational institution which is not heavily underwritten. In medical education this is particularly true. Inadequate funds in a medical school result in wretchedly sub-standard qualities, and even the schools with adequate funds, if there be any such, depend largely on men who will work for a dole. Personally, I feel that the time I have spent on necropsies is comparable to the tuition fee I would have had to pay for a more orthodox postgraduate course. On this basis necropsies for the practitioner are feasible, but, as I have said, for a variety of reasons it is a practice available only for the young man—and the young man's share of patients is necessarily small.

Even if we were to make the extravagant assumption that our plan is practicable for the older clinicians, it is knocked flat by a cursory consideration of the technical difficulties involved. Profitable as my amateur necropsies have been to me, I would be the last to intimate that they have been anything but a patch on the real thing. It need hardly be said that it would have been much more profitable for me to have stood by as a witness. If, by endowment, or by some coöperative scheme, the practitioners in the vicinity of Boston could have a pathological service for their private patients, they might build up a series of case records which would be as instructive to medical students as those of the Massachusetts General Hospital now are to graduate students. Such a series of case rec-

ords would be far from a duplication of the Cabot series, and yet I believe fully as valuable from their viewpoint of practical therapeutics in the home.

In the foregoing paragraphs I have given my reasons for stating that in private practice a very high percentage of necropsies may be had for the asking. The necropsy is of educational value to the profession, and, therefore, the stricken family cannot be expected to pay for it. The only way to utilize the opportunities offered at the present time is for the clinician to perform his necropsies gratis. The clinician, however, is not fitted to do this as a matter of routine, and so I suggest that the possibility of establishing a pathological service for private patients be considered by those interested in postgraduate medical instruction.

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MODERN CONCEPTION OF NORMAL CARBOHYDRATE METABOLISM

BY GEORGE H. TUTTLE, M.D.

DURING the last five years countless investigations conducted in the laboratories of physiologists and bio-chemists and in diabetic clinics have produced a mass of facts relating to carbohydrate metabolism which make some revision of our previous conceptions necessary. The advent and use of insulin has illuminated the dark corners of the subject. Perfusions of various organs, with and without insulin, have rendered positive many suppositions regarding glycogen formation which were indefinite before. Recent experiments by Best and his colleagues, in continuation of previous experiments by others, have finally accounted for the "extra sugar" which always mysteriously disappeared from the blood current. The study of the action of glycogenase in effecting the reduction of glycogen to glucose is better understood: and especially the fact that no glycogenase exists in the muscles, and hence, as proved recently by Soskind at Toronto, that muscle glycogen is not reconverted to glucose to raise the blood sugar. The source of both insulin and glycogenase is now believed to be in the pancreas since this organ contains by far the largest supply of these two substances; insulin acting as the anabolic agent, in raising glucose to glycogen; and glycogenase, found in all body fluids and tissues except muscles, acting as a catabolic agent in reducing glycogen to glucose. Since both insulin and glycogenase exist abundantly in the blood and body fluids no glycogen can be present therein. An equilibrium exists between these two opposing forces of metabolism and glucose remains unchanged in the blood. Also experiments have shown that insulin alone in contact with glucose cannot form glycogen, but if a piece of muscle or muscle extract be added to the solution, glycogen will form. This, together with the perfusion experiments, shows that insulin and glucose, always found together in the blood, do not form glycogen until they reach a body tissue, whereupon glycogen becomes deposited in that tissue. It is now recognized also that muscle glycogen furnishes the power and heat of muscular action, exploding and breaking up into lactic acid and other metabolites, but never being reconverted into glucose by glycogenase, since none exists in the muscles. In the earlier experiments on low hypoglycaemic states in which there were convulsions an exhaustion of muscle glycogen was found, making it seem as if glycogen had been reconverted to glucose to raise the blood sugar; but this was an illusion as it does not occur in muscles previously paralyzed by *curare*.

It is now believed that glucose can be removed from the blood in only two ways and that there is no mysterious unknown substance into which it is transformed:

1. By conversion into glycogen by the agency of insulin.
2. By normal oxidation into H_2O and CO_2.

Conversion of glucose into glycogen of the tissues represents one of the two ways in which glucose is removed from the blood, and it is because of under-estimating the extent of this removal of glucose that the mystery of the disappearance of the "extra sugar" existed for so long. The second way in which sugar is removed from the blood is by its normal oxidation into H_2O and CO_2. After each meal fresh glucose enters the blood, and the oxidation, as shown by the rise of the respiratory quotient, increases for about three hours, then falls until the next meal. This is what occurs if the blood sugar is within normal limits, but in diabetic states when the blood sugar exceeds normal limits, the R. Q. always rises after administration of insulin. It was thought at first that insulin increased oxidation directly, but as laboratory experiments did not establish this fact, it is now believed that oxidation is hindered by this excessive concentration of glucose and that when the insulin removes the glucose from the blood by converting it into tissue glycogen, the normal concentration is restored and oxidation proceeds as usual.

A new fact in regard to oxidation is now realized. When we consider that oxidation of

the glucose in the blood and of the glucose derived from the glycogen, reconverted by the action of glycogenase of the tissues (heart, liver, etc.,) goes on for 5 or 6 hours following a meal, we must realize that this forms an enormous vacuum for glucose in the tissues which is much greater than was thought possible. It is for this reason that much glucose passes directly through the liver without being converted into glycogen therein, in order to rush through the blood directly to the tissues to satisfy this sugar hunger and there to be converted into glycogen by the insulin which has been previously supplied to every tissue from the pancreas by way of the blood current. The glycogen of the liver seems to be a temporary and continually changing emergency supply devoted to the purpose of regulating the constantly changing blood sugar concentration and taking care of the dangerous hypoglycaemias. It is comparatively small in amount. Any greater demand for glucose has to be supplied from the keto acids of proteid foods or from the actual breaking down of tissue proteids and perhaps fats.

From these new conceptions of carbohydrate metabolism the question as to "how insulin acts" must be answered as follows: It has only one proved function so far i. e. the duty of converting glucose into glycogen when in contact with living tissue.

A word picture of the working of carbohydrate metabolism in the light of these new conceptions, would be somewhat as follows:

The pancreas sets free in the blood the two active agents of metabolism, insulin, from the Islands of Langerhans, and glycogenase, an enzyme from unknown sources, and these are transported to the various tissues of the body. A stream of glucose absorbed from the intestines flows through the veins and lymphatics into the general circulation, drawn by the suction of the vast sugar vacuum created during the preceding hours by the normal oxidation taking place in the tissues in the performance of their functions.

As this stream flows through the various organs as the heart, liver, muscles, etc., meeting insulin everywhere, each one converts into glycogen by means of the insulin contained in it, its own proper reserve supply for the hours ensuing before the next meal. The liver retains enough to regulate the blood sugar during these hours, the heart enough to keep up its perpetual beating, the muscles a large amount so as to be ever ready for explosive muscular action in emergencies. It is for this reason that no glycogenase exists in the muscles so that their supply may always remain abundant and never be reduced by glycogenolysis.

This is a simple picture of normal metabolism. In diabetes, where the amount of insulin is deficient, less glycogen is deposited in the tissues, an excess of glucose accumulates in the blood and flows over the threshold into the urine. The deficiency of glycogen deposition in the muscles undoubtedly accounts for the muscular weakness of diabetics, and it must be remembered when advocating exercise for patients that the heart is a very important muscle. In fact, all organs and tissues decrease in function when there is a deficiency of glycogen deposition, which perhaps, may be an element in the general collapse of all functions when the disease has progressed to the comatose state.

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MEDICAL PROGRESS

PROGRESS IN PEDIATRICS

BY JOHN LOVETT MORSE, M.D.

THERE has been little, if any, real progress made in Pediatrics in this country during the past year. Pediatrics is, however, in a healthier condition here now than it was a year ago. Much has been done to show that the claims which were made for certain of the newer methods of infant feeding were exaggerated and unjustified and that some of the explanations for the success claimed for them were erroneous. The continued study of rickets has shown that the metabolism in this disease is not as simple as it seemed a few years ago and that great care must be exercised in drawing conclusions. Most important of all is the exposure of the extravagance of many of the claims which were made for ultraviolet irradiation and the efforts which have been made to arrive at a scientific basis for the use of ultraviolet irradiation in practice. Little, if any, more progress seems to have been made in other countries, although, apparently there was less need for correction and rearrangement of facts on the other side of the water than here.

INFANT FEEDING AND RICKETS

Victor E. Levine, Prof. of Biolog. Chem. and Nutrition, Creighton University, Nebraska, in a paper on *Pasteurized Milk as Food for the Infant, (Archives of Pediatrics*, 1927, *44*, 273.) concludes that, while in the pasteurization of

milk we have found safety in one direction, it is a method which may show decided harm in other directions. It is impossible to abstract this article completely, as it is itself a summary. He calls attention to the facts that pasteurization does not destroy the toxic products of bacteria, that dead bacteria are not innocuous, that pasteurization destroys only a portion of the bacteria present, that bacteria grow in pasteurized milk and that pasteurized milk may be again contaminated. He suggests that pasteurization may be sanitation at the wrong end. He mentions the thermolability of the antiscorbutic substance, the action of heat on the proteins of milk, the precipitation of calcium oxide in milk by heat, the reduction in the number of free ions and the action of heat on the biologic and nutritive values of foods. This article suggests, even if it does not prove, that pasteurization may not be the innocuous procedure which its proponents claim it to be.

Florence L. MacLeod has studied the *Antiscorbutic Vitamin Content of Milk of Stall-fed Cows Throughout the Year,* (*J. A. M. A.*, 1927, *88*, 1947.), using guinea pigs in the tests. She found that the antiscorbutic value did not vary throughout the year. It was greater than that of average milk from pasture-fed cows. Her work shows that the milk of stall-fed cows which are given a well balanced, uniform diet throughout the year will not show seasonal variations in its antiscorbutic value. These cows received a good quality of ensilage throughout the year. She attributes the high antiscorbutic value of the milk to the ensilage, and believes that by giving a good quality of ensilage, the antiscorbutic potency of milk may be raised to and kept at a high level.

Hess and his associates have studied at considerable length *The Peptic Digestion of Cow's Milk and the Effect of Various Modifications Used in Infant Feeding,* (*J. A. M. A.*, 1926, *87*, 1360.). They call attention to the fact that the slower and less complete digestion of cow's milk is usually ascribed to its high buffer action and to the hard, tough curds formed in the stomach. They say that most of the adaptations of cow's milk to infant feeding have had as their object the correction of the curd or of the pH. Boiling, alkalizing and predigesting and the addition of starchy diluents had, as their object, the prevention of a hard, leathery curd. The acidification of milk aims to change the pH to favor peptic digestion. The object of their work was to compare the various modifications used in infant feeding with reference to the rate of gastric digestion and to determine the relative importance in the digestive process of the character of the curd and the pH. Peptic digestion experiments were carried out *in vitro* and later with young puppies, vomiting in them being induced by apomorphine. It is impossible to describe all the experiments or to give all the conclusions. A few of the most important are:

In dogs there is no immediate response in the secretion of hydrochloric acid as a result of feeding modified milks. The changed pH of the gastric contents in the early part of digestion is the result of acids or alkalis introduced in the milk. After the curd has formed, the whey passes rapidly from the stomach and the acidity then present is the result of normal gastric secretion. Question arises as to whether the improved digestion of the acid and boiled milks is not due to the effect on the curd formation and to denaturization of the protein, rather than to a lowered pH. Lowered pH can apparently be of importance only during the early stages of digestion, before the whey has left the stomach. Added acids leave the stomach with the whey.

They found cultured lactic acid milk superior to all other acid milks in its effect on peptic digestion and in the character of the curds formed. Orange juice gave the highest total soluble protein. Both orange and lemon juice introduce vitamins, mineral constituents and additional alkaline buffer salts. They seem to them, therefore, to be the logical choice for continued feeding as additions to raw, pasteurized and boiled milk.

Flood, *Calcium Balance with Hydrochloric Acid Milk,* (*Amer. Jour. Dis. Children*, 1926, *32*, 550.), states that his observations of the rachitic infants in the St. Mary's Hospital show that the rachitic bones in these infants heal much faster on hydrochloric acid milk than on any other formula. He also states that no case of rickets developed in 325 normal infants fed on hydrochloric acid milk!!! Because of these observations, he studied the calcium metabolism in two normal and three rachitic infants on both sweet milk and acidified milk mixtures. One of the rachitic infants had mild, another moderate, and a third severe rickets. He concludes that hydrochloric acid milk increases the retention of calcium chloride in rachitic infants, but has no effect on the calcium metabolism of the normal baby. He also concludes that hydrochloric acid milk has some prophylactic action against rickets during the first year, as it insures a high, constant, calcium absorption during this time.

Wills, Saunderson and Paterson made a very careful study of *Calcium Absorption in Relation to Gastric Acidity,* (*Archives of Disease in Childhood*, 1926, *1*, 245.). They state that it has been assumed that, since calcium salts are soluble in hydrochloric acid, increased gastric acidity will increase the calcium absorption and, hence, the supply to the body. The converse hypothesis has also been advanced to account for the mechanism of the failure of the calcium supply of the body in rickets. The same argument has been used for lactic acid milk. They also state that it is generally accepted as correct that, in active rickets, the retention of calcium is decreased and that the balance may be negative, that when treated by either cod liver oil or ultraviolet light the retention is increased, and that all calcium

salts that are soluble in an acid medium are available as a source of calcium for the body. Bearing these facts in mind, they undertook a research to determine if it were possible to correlate a decreased acidity with a poor absorption and retention of calcium and *vice versa*. The work was divided into two parts:

1. The effect of giving acids, or acid forming salts, on the calcium balance.
2. The relation, if any, between the changes in calcium retention that occur in the healing of rickets and any change in gastric acidity.

They sum up their results as follows:

1. Calcium retention was decreased, the balance was negative, in infants fed on hydrochloric acid milk, or treated with ammonium chloride: in the first case, the gastric acidity was greatly increased and the converse occurred with ammonium chloride.
2. Lactic acid milk feeding led to a slightly increased loss of calcium. The gastric acidity was raised.
3. In healing rickets, the retention of calcium was increased, but the increase in gastric acidity which occurred in the majority of cases did not run parallel with this increased retention, but rather with the general condition of the child.
4. Gastric acidity does not appear to be a limiting factor in the supply of calcium to the body.

Bergeim has developed a new method for studying *The Absorption of Calcium and Phosphorus*, (*Jour. Biol. Chem.*, 1926, *70*, 29; editorial in *Jour. A. M. A.*, 1926, *87*, 1395.). By this procedure, he found that the addition of lactose to the diet increased the amounts of calcium and phosphorus absorbed far more than did glucose, sucrose, maltose or starch and that it was superior to dextrin. The effect was greater on calcium than on phosphorus absorption. The influence of lactose and the other carbohydrates on calcium absorption is believed to be due to increased lactic acid fermentation in the intestines with a resulting increase in the acidity of the intestinal contents. Lactose is known to produce a distinctly acid condition throughout the gastro-intestinal tract. Dextrin has a similar, but lesser, effect. Other common carbohydrates have little effect, apparently because they, or their products of hydrolysis, are very rapidly absorbed. He believes that the pronounced effect of lactose in increasing calcium absorption should be considered in connection with the preparation of milks for infant feeding. This does not necessarily mean, however, that lactose is always the sugar of preference, because sugars more readily digested and absorbed and producing less fermentation in the intestines may be better in certain gastro-intestinal disturbances. Lactose will not take the place of antirachitic substance or of phosphorus in the diet. When, however, calcium absorption is one of the main factors to consider, the effectiveness of lactose in this direction should be kept in mind.

Bergeim has used his new method for the study of the comparative absorption and secretion of calcium and phosphorus in different parts of the alimentary tract. Animals rendered rachitic by a phosphorus-low diet as well as such animals given cod liver oil showed a considerable degree of calcium absorption from the small intestine. The rachitic condition could not, therefore, be due to a failure of calcium absorption. The animals given cod liver oil showed, however, a positive calcium balance throughout the intestines. Phosphorus secreted into the upper intestine was absorbed in the lower, producing an ultimate positive balance of this element also. In the rachitic animals the calcium absorbed in the upper intestine was excreted into the lower intestine, leading to a negative or subnormal balance. Coincident with this marked excretion of calcium into the lower bowel, there was a failure of phosphate to be adequately reabsorbed and, hence, a loss of the latter from the body.

Koch and Cahan in the course of their studies of rats on rachitic and nonrachitic diets, found that the *Inorganic Blood Phosphate*, (*Amer. Jour. Dis. Children*, 1927, *34*, 187.), is influenced by many factors, some of which are not yet understood. They believe, therefore, that it is not possible, at present, to use the concentration of these constituents in the blood as an infallible criterion for the antirachitic properties of a given diet.

They found that irradiation of young rats fed on a rachitic diet had no effect in raising the phosphate value, but that it did tend to maintain the phosphate value of matured rats on a higher level than that of the non-irradiated animal. The addition of cod liver oil to this diet raised the phosphate value of young rats to about twice the low values, but these values were still appreciably lower than the normal values for rats of the same age. Their results indicate that, while cod liver oil raises the blood phosphate to approximately normal, and direct irradiation of the animal and feeding of irradiated cholesterol have some influence in raising blood phosphate, it is still possible to obtain a low phosphate value and a low product of phosphorus calcium in an animal which, so far as roentgenograms and histologic examination can demonstrate, shows a perfect calcification of the bones.

Hoag and his associates investigated *The Effect of Potent Parathyroid Extract on Calcium Balance in Infants*, (*Amer. Jour. Dis Children*, 1927, *33*, 910.). The investigation was undertaken to determine the effect of parathyroid extract on calcium and phosphorus balance, especially in diseases leading to a state of hypocalcemia, which offered the most obvious indication for the therapeutic employment of parathyroid hormone. Infants were studied because of their relatively great intake and retention of calcium and phosphorus, and because of the frequency of disturbances in their assimilation of these elements, as found in rickets and idiopathic tetany.

Seven infants were studied—one normal infant, four rachitic infants and two with infantile tetany. The one normal infant and three infants with rickets showed distinct diminution of calcium retention during the periods in which parathyroid extract was administered. In one patient with rickets there were no recognizable roentgenologic evidences of either calcium removal or deposition in the bones. Two patients with infantile tetany showed a slight tendency toward increased retention of calcium during the periods in which parathyroid extract was administered. One rachitic patient showed a more marked increase in the retention of calcium. A relative and an absolute increase in urinary phosphorus invariably followed the administration of parathyroid extract. They conclude that, even though the influence of potent parathyroid extract on the balance of calcium was not found to be uniformly unfavorable, its administration for any purpose other than immediate, temporary elevation of serum calcium should still be considered an experimental and not a routine clinical procedure.

ULTRAVIOLET RADIATION AND IRRADIATION

Bundesen and his associates studied the *Ultraviolet Radiation from Sunlight in Chicago,* (*J. A. M. A.,* 1927, *89,* 187.). The solar spectrum was photographed daily from November 28, 1926, to May 16, 1927. They give tables and photographs showing data for a considerable consecutive period through December and for the clearest days from the middle of January to the middle of May. Their explanation of the original plates shows plainly that the solar radiation reaching Chicago in the winter months is extremely poor in the spectrum region 320 to 290 mμ. Under the most favorable conditions the lowest detectible lines were in the region of 310 to 305 in November, December and January and are of extremely low intensity there. In February, March and April the limits are in the region 304 to 300 and by May, the limit is reduced to 299. In March, when Chicago's atmosphere is commonly heavily laden with smoke, the solar spectrum usually does not show any appreciable light intensity below 310. The reduction of the spectrum limits by smoke, expressed in intensity, is much greater, however, than the reduction in mμ. would imply. They conclude that comparatively little ultraviolet radiation of known physiologic significance appears in the sun's spectrum during the winter months in Chicago and that the ultraviolet rays are absorbed to a significant degree by smoke in the atmosphere.

Hess and Anderson after a very careful study by refined methods of *The Antirachitic Activity of Monochromatic and Regional Ultraviolet Radiations,* (*J. A. M. A.,* 1927, *89,* 1222.), come to the conclusion that ultraviolet radiations shorter than those of sunlight are more potent in healing rickets than the effective area of solar rays—the band comprising waves from 290 to 313 mμ. A study of monochromatic light demonstrated the marked potency of the wave lengths 280 and 302 mμ. It showed that activity at 313 is very feeble and that this point must be regarded as the upper limit of the antirachitic field. The area of specific solar radiation is markedly circumscribed. A difference of a few millimicrons determines whether or not waves are effective. During the winter months, when the shorter ultraviolet rays do not reach the earth and the longer ones are less intense, the width of the antirachitic zone of sunlight is only about 5 mμ. These observations emphasize the danger of the small band of specific radiations being filtered from the atmosphere by moisture, dust, smoke, and other foreign substances.

Tisdall (*American Jour. Dis. Children,* 1927, *34,* 147.) attempted to determine by a series of experiments with rats the variations in *The Antirachitic Effect* of sunlight and *Skylight* throughout the year. Each week a series of young rats was placed on a rachitic diet. Some of the rats were placed outside daily for two hours in the middle of the day on the sunny side of the laboratory roof, thus receiving both the direct rays from the sun and the reflected rays from the sky. Others were exposed for the same time on the shady side of the roof, thus receiving only skylight, and control rats were kept indoors in a room with a subdued light. Further control rats were placed on a normal diet. The rats were killed after 4 weeks and the inorganic phosphate content of the blood and the ash content of the bones determined. He found that skylight, which is the reflected light from the sun, produces an antirachitic effect roughly from ½ to ¾ of that produced by the available sunlight, which, of course, includes the reflected light from the sky. The practical application of this work is that infants may be placed out of doors, but protected from the direct sun, and still receive a great antirachitic effect from the reflected ultraviolet rays of the sky.

Dr. Best of the Department of Physiology and Hygiene, University of Toronto, measured the ultraviolet content of skylight alone and also the ultraviolet content of the available sunlight during this period. He found that during the last week in April and the first week in May the ultraviolet content of skylight alone was about 60% of the ultraviolet content of sunlight.

Incidentally, these results seem to show that there are enough ultraviolet rays in both sunlight and skylight in winter to have some action in rickets. It is rather hard to reconcile them with those of Bundesen and Hess.

Mackay (*Archives of Disease in Childhood,* 1927, *2,* 231.) in discussing *Artificial Light Therapy in Infancy,* states that among the many varied and sometimes conflicting claims advanced for the beneficial effects of artificial light therapy, there appear to be only a limited number supported by objective evidence. Critics are

now asking what proof exists of improvement in health arising out of the use of light clinics for children up and down the country, apart from those effects, such as the prevention of rickets, which may be obtained more simply by the use of cod liver oil. It seemed to her, therefore, worth while to set forth the results of a control investigation of the effect of light therapy on infants under conditions similar to those existing at many light treatment clinics for young children. She says that it is obvious that cod liver oil is more economical, in both time and money, than light treatment for rickets. All the cases were out-patients attending the Queen's Hospital for Children or a light treatment center in Bethnal Green. Sixty-six cases were treated with the mercury vapor quartz lamp and there were 137 control cases. The observations extended over thirteen months. The patients were all infants. They were all subnormal in general health and in weight when they came under observation. All were given cod liver oil during the winter with a view to limiting rickets and spasmophilia as a complicating factor from the investigation.

Weight: The rate of gain in weight of the controls was approximately equal to that of the light cases, whether the light group was considered as a whole or comparison was made only with a section of cases having more intensive treatment. What differences there were, were under 2% of the normal weight and were probably due to chance.

Hemoglobin percentage in the Blood: This was approximately the same in the control and in the light group. Light treatment did not cure or prevent the development of anemia.

Resistance to Infection: Comparison was difficult, but the amount of intercurrent illness in the light group and controls appeared to be about the same in winter. In summer the figures suggested that the controls showed fewer respiratory infections.

General Clinical Condition: The author's notes, made at the time, suggested that, in the late winter and spring months, the light cases, as judged by color, general nutrition and appearance of health, *seemed* to have made greater progress than the control. Nevertheless, no objective evidence was obtained to support this.

She concludes that the fact that no objective evidence was obtained that light treatment, as here given, was of benefit to the health of the infants under consideration, emphasizes the need of more investigation before authoritative statements can be made on the uses and limitations of artificial light therapy.

Fries (*Amer. Jour. Dis. Children,* 1927, *34,* 159 and 166.) states that it has been assumed that there is a rise in basal metabolism following ultraviolet radiation. She calls attention, however, to the almost complete lack of any observations proving that this is so. She says that it is well known that there is an increase in blood calcium and in phosphorus. She says that general improvement in the patient's condition in many ways is said to occur, but such improvement has not been accounted for constitutionally. She wonders if any of this improvement can be ascribed to the supposed change in basal metabolism. Her research was to answer this question. Her work was divided into two parts: 1., To determine whether there was a rise in basal metabolism following therapeutic doses of ultraviolet radiation over a long period of time. 2., To discover whether there was an immediate rise in metabolism following each successive treatment.

Her study was very carefully carried out and her results well controlled. Three children in the hospital and two in the out-patient department were treated with ultraviolet radiation three times a week for a month and examined again in a month. The basal metabolic determinations did not vary more than 10%, except in one ambulatory case in which there was a decrease. She concludes that it seems justifiable to assume that a series of treatments with ultraviolet radiations will not affect the basal metabolism of the majority of children. She also found that the basal metabolism preceding and following single irradiations usually did not vary more than 10%. In all cases in which the increase was greater than 10%, there was a disturbing environmental factor, which, in itself, could have explained the increase. The blood pressure and the pulse rate were unaffected. She states that it can be assumed, therefore, in all probability, that there will not be any change in basal metabolism, pulse rate or blood pressure in the majority of children immediately following therapeutic doses of ultraviolet light.

Greenbaum (*Amer. Jour. Dis. of Children,* 1927, *34,* 80.) calls attention to the *Dermatoses Due to Light Sensitization.* He says that it has been known for many years that more or less prolonged exposure to the violet and ultraviolet rays of the sun, and naturally to those artificially produced, may cause not only systemic disturbances, but also inflammatory and degenerative changes in the skin, varying with the person. The harmful systemic affects have not been well understood. He says that deaths of infants following short exposure to ultraviolet irradiation have been reported. There has been an enormous increase in the use of ultraviolet therapy recently because of its value in the treatment of certain diseases of infants. He says that its application in all sorts of ailments is sure to follow. It is very important, therefore, at this time to review the subject of light sensitization and the clinical cutaneous reactions to which it leads.

He gives a list of the cutaneous light reactions and many illustrative cases. He emphasizes the personal susceptibility to and the dangers of ultraviolet irradiation in patients sensitive to light. He says that, with the exception of hematoporphyrinuria, there are no diagnostic

signs or symptoms of the presence of the potential light sensitization in very young children. When ultraviolet therapy is to be used in infants, therefore, test doses to determine the tolerance or sensitivity of the skin should be used. In older children, a recurrent eruption on exposed surfaces, particularly if it is associated with scarring, should be viewed with suspicion.

Hess (*J. A. M. A.*, 1927, *89*, 337.), in a paper entitled the *Antirachitic Activity of Irradiated Cholesterol, Ergosterol, and Allied Substances*, reviews in considerable detail the recent work on cholesterol and its activation. He presents evidence which shows that it is probably not cholesterol but an impurity which is activated. Ergosterol can certainly be activated and, when activated, is about 500 times as potent as irradiated cholesterol. He states that it is possible that ergosterol is the essential impurity in cholesterol and that activated ergosterol is the antirachitic factor or vitamin. He says that it would seem more probable, however, that other unsaturated sterols will be discovered which can be rendered antirachitic by ultraviolet rays and that ergosterol is merely one member of this group. Ergosterol is easily extracted from yeast.

In other parts of this paper he states that the most practical application of an irradiated food is the use of irradiated dried milk for infant feeding. In order to avoid the development of a disagreeable taste or odor and the destruction of the fat-soluble and antiscorbutic vitamins of milk, the irradiation should be for only two minutes at a distance of one foot. The specific activity of the milk is maintained for a period of at least six months. Irradiated yeast may be used instead of ergosterol as an antirachitic.

Hess, Weinstock and Sherman (*J. A. M. A.*, 1927, *88*, 24.) *Developed Antirachitic Properties in Human Milk by Irradiating the Mother.* They refer to the work of others showing that the antirachitic value of an animal's milk can be increased by irradiation with the mercury vapor lamp. They also refer to the fact that the loss of salts in lactating animals is diminished or stopped by irradiation. They note also that sunlight is not sufficient to stop this loss. They call attention to the difference between the lactating cow and the woman in that the cow secretes one half as much milk as she has of blood, while a woman secretes only one seventh as much milk as she has of blood. Nevertheless, they suggest that the irradiation of nursing mothers may diminish trouble with their teeth.

They found that the milk of a woman had no curative effect when given to rats on a rachitic diet. After she had been irradiated, however, every other day for a month, her milk cured rachitic rats.

PROTEIN NEEDS AND "PROTEIN FEVER"

Bartley, in his paper on the *Protein Requirement as Determined in Diabetic Children,* (*Amer. Jour. Dis. Children*, 1926, *32*, 641,) states that in formulating optimum diets for children, it has been considered necessary to prescribe a high protein as a primary food factor essential for normal growth and development. The aim of this investigation was to determine the actual minimum protein requirement in children. This may be defined as that amount of protein which will establish a positive nitrogen balance, prove adequate for growth in stature, promote normal development and allow the child to gain weight at a normal rate. An excellent opportunity for the work was offered by a group of diabetic children which were available for study over long periods of time. He says that children require more protein per kilogram than adults, because they must grow and develop, but it is not likely that they should require from 300 to 400% more than the generally accepted adult requirement of 0.66 gm. per kilogram to fulfill these additional requirements.

His conclusions are:

1. Children between the ages of four and fourteen maintain a positive nitrogen balance, grow in stature, gain weight at a normal rate and develop normally, when supplied with 0.6 to 1.0 gm. of protein per kilogram of body weight, provided (a) their caloric requirement is fulfilled, and (b) the diet is adequately chosen from foods rich in vitamins.
2. The protein requirement of children is a function of the ingested calories, varying inversely with the caloric intake.
3. The protein requirement of children bears no relationship to the fatty acid: glucose ratio, provided it is compatible with the persistent absence of ketosis.
4. The protein requirement of children varies inversely with age, and is directly proportional to the rate of growth.
5. It is possible to feed diets much lower in nitrogen than is usual. Provided the caloric requirements are fulfilled, the diet is rich in vitamins and is adequately chosen from vegetable and animal sources, no evidences of protein starvation will be manifested.

Hoag and his associates (*Amer. Jour. Dis Children*, 1927, *34*, 150.) brought on fever, without other symptoms except thirst, restlessness and dry skin, by the administration of diets containing a proper concentration of either "Casec" or "Casein-Harris", purified egg-white protein, urea or sodium chloride. All the symptoms were relieved promptly by giving large doses of water by mouth. Water under the skin was less effective and physiologic sodium saline solution given by mouth or under the skin was almost totally ineffective in reducing fever. The fluid treatments that were successful produced profuse perspiration. The defervescence of the fever was not necessarily accompanied or preceded by a lowering in the concentration of the blood nonprotein nitrogen. Studies of the respiratory metabolism showed that a high protein diet did

not cause fever when accompanied by sufficient water. Their results confirm the belief that urea has no "specific dynamic action", and emphasize the importance of vaporization of water in dissipating heat during defervescence of these fevers. They were unable to demonstrate antigen in the serum at the time of "protein fever".

These observations all suggest the possibility that end-products of the ingested pyretogens, whether they are stored in the tissues or excreted by the kidneys, bind osmotically more water than is received in the fever-producing diets. The depletion of the body reserve of water through attempts to remedy this deficiency curtails the amount available for vaporization and thus interferes with heat dissipation to such an extent that fever develops.

Baumecker and Schönthal (*Zeitschrift fur Kinderheilkunde,* 1927, *41,* 669; abstract in *Amer. Jour. Dis. Children,* 1927, *34,* 107.) accept as facts that there is an increase of urea in the blood and increased diuresis in albumin fever. They gave infants in addition to concentrated food, added amounts of albumin corresponding to the nitrogen need. There was an increase of temperature in the majority of cases which acted like a relative water-starvation fever. In comparing albumin fever and urea fever they found that the latter set in later and that the temperature rose less sharply. With urea fever there was a quicker excretion of the surplus nitrogen and a stronger diuresis than in albumin fever. They conclude that albumin leads not directly to a dynamic albumin fever, but to a relative water-starvation fever by increase of the water output.

SIMPLE CONGENITAL ANORECTAL STRICTURE WITH MEGACOLON IN EARLY INFANCY

Brennemann (*J. A. M. A., 89,* 662.) reports six cases. In all of them there was marked abdominal distention, due to an overdistended colon, obstinate constipation, and evidences of great distress. Most of the patients vomited. In some, coils of intestine and increased peristalsis could be seen and in others, not, probably depending on the thickness of the intestinal wall. In all of them there was apparently an identical anatomical condition, that is, a sharp, short, firm, constricting ring just above the sphincter ani, that is, from 1 to 3 cm. from the outside. The ring varied in caliber in different cases. In all it offered decided resistance to the examining finger, but in all yielded reluctantly, but slowly, and in all remained dilated with the insertion of each larger finger and in all remained permanently dilated and functionally normal.

Superficially, these cases resemble Hirschprung's disease. They do not belong in that category, however, if the term is restricted to the original conception of Hirschprung, that is, an idiopathic congenital dilatation and hypertrophy of the colon without demonstrable distal obstruction in the intestine. The true explanation of these congenital, anorectal strictures would seem to be found in an embryonic arrest of development.

VON JAKSCH'S ANEMIA

Cooley (*Amer. Jour. Dis. Children,* 1927, *33,* 786.) discusses the question as to whether there really is such a condition as von Jaksch's anemia and, if there is such a condition, what is its description and definition. He believes that there is such a condition and gives a description of the clinical manifestations and of the blood. His description and the reasons for his belief are too long to abstract. In brief, however, he believes that von Jaksch's anemia belongs in the class of the hemolytic anemias.

THE WORLD'S CHILDREN

The Dangerous Age in Employment

Children 16 and 17 years of age suffer proportionately more injuries while at work than children either older or younger, according to a recent report of the Wisconsin Industrial Commission on child labor in that State.

Large Double Compensation Awards to Minors, New York

An award of $9,984 was made in a recent year in New York State to a boy of 15 for the loss of his arm while illegally employed, and another of $9,760 to a boy of 16, also illegally employed, for the loss of a hand. The New York Bureau of Women in Industry, which has published an analysis of the cases of double compensation paid to minors for injury during illegal employment, calls attention to the need for a law to govern the administration of such awards so that they will be used in reëducating the disabled minors. At present they are paid to the minor or his guardian with no stipulation as to how the money shall be used.

Intelligence Tests for Blind Children.

During the last 10 years, intelligence tests adapted for blind children from the tests used for children with normal sight have been given in more than half the schools for the blind in the United States. The Pennsylvania Institute for the Instruction of the Blind in Pennsylvania and the Perkins Institute for the Blind in Massachusetts have undertaken experimental studies in the psychology of the blind, in the hope that such research will ultimately do for the education of the blind what is being done for the general educational system of the country, through the classification of students according to ability, the diagnosis of their individual difficulties, and vocational guidance.

Fewer Boy Automobile Thieves in Los Angeles

The records of the Los Angeles County Jail indicate that between 1919 and 1926 the average age of its inmates decreased from about 31 years to 29 years 10 months, and that nearly a fifth of the inmates were between the ages of 16 and 20. The most frequent offence was the stealing of automobiles, and fully half of these thefts were by boys under 21. An educational campaign among young persons and their parents, undertaken by the sheriff's office through schools, clubs, and various organizations and directed primarily toward the young automobile thief, has already resulted in a notable decline in this type of offense.—*Bulletin of the United States Department of Labor, Children's Bureau, Washington.*

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 13521

SIX WEEKS' JAUNDICE

MEDICAL AND SURGICAL DEPARTMENTS

A married Canadian woman fifty-five years old was sent in October 17 by her physician for study of jaundice and epigastric pain.

During the last week of August she began to have a feeling of fullness in her abdomen after eating, to belch gas and at times to have distention. A week after the onset she began to have icterus, which had steadily increased. Pruritus was marked. Throughout the illness her stools had been clay colored and her urine very dark. Soon after the onset she began to vomit three or four hours after eating, and continued to do so three or four times a week. The vomitus was usually food eaten and had only rarely been bitter. Her appetite had been poor. She had had more or less constant epigastric discomfort localized in the midline and extending to both sides and radiating at times to all parts of the abdomen. It had never been colicky or knife-like, and never radiated to the back. She had been in bed most of the time for two months and not up at all in the past two weeks. This had been because of discomfort in attempting to stand up straight and recently because of increased weakness and distress. For the past three weeks her right side had been too sore to lie on. The first of July she weighed 186 pounds, her usual weight for several years past. She thought she had lost about ten pounds. X-ray studies made September 17 showed evidence of multiple diverticulitis in the region of the lower descending colon and the sigmoid. On account of the spasm and general irritation accompanying these diverticula the large intestine could not be completely filled with the barium enema. Nothing was found that was suspicious of neoplasm or any real organic obstruction. In the study of the liver and the gall-bladder area the evidence was essentially negative. The gall-bladder however admitted the dye poorly. This was thought perhaps suggestive of chronic cholecystitis, but it was not believed that the evidence was sufficiently definite to warrant a positive diagnosis. The stomach and duodenum appeared normal.

Her mother died at seventy-nine of cancer of the liver.

The patient had several attacks of abdominal pain and vomiting without jaundice twenty-seven years before admission. She had had two miscarriages at three months and four healthy children. For the past year her bowels had been constipated, moving only two or three times a week with cathartics. She had a flow of bright blood with bearing down pains for two hours on two consecutive days two weeks before admission, seven years after the menopause. She had had hemorrhoids for the past two weeks.

Clinical examination showed a large woman with some evidence of loss of weight, lying in apparent distress. The skin and sclerae were deep yellow. The heart and lungs showed no abnormality. Blood pressure 140/90. The abdomen was distended and tympanitic. The liver edge was not felt. No masses were made out. There was moderate tenderness in the epigastrium and the left upper quadrant. Pelvic examination showed pain on motion of the cervix and tenderness in the vaults, more in the left. Rectal examination showed external hemorrhoids.

Before operation amount of urine not recorded, specific gravity 1.010 to 1.020, urine dark at all of three examinations, a slight trace to a very slight trace of albumin and much bile at all. Stools clay colored. Blood: 10,200 leucocytes, hemoglobin 80 per cent., reds 5,000,000. Bleeding time 5 minutes. Clotting time 11 minutes. Icteric index 50+.

X-ray examination—not a Graham test—showed no visible gall-stones. Examination with a barium enema showed considerable spasm in the region of the sigmoid and delay in the passage of the barium in this region. Along the margins of the sigmoid there were small outpocketings of barium which it was thought probably represented diverticula. The colon was unusually large and redundant. There was considerable gas in the region of the cecum. The examination of the cecum was unsatisfactory.

Before operation the temperature was 97.6° to 99.3°, the pulse 85 to 99, the respirations normal.

A medical consultant reported: "Aside from the jaundice the striking thing on physical examination is the almost complete absence of liver dullness by percussion. There is some dullness over an area not greater than a rib space both front and back. The liver dullness may be obscured by excessive gas in the intestines. I should expect posterior dullness however in such a case. . . . Exploration seems to be the only method of establishing a diagnosis."

October 22 operation was done. Bleeding continued after it. Transfusion was not done because of the hopeless condition of the patient. The evening of October 23 she died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

The diverticulitis was entirely in the hepatic flexure and the ascending colon.

Dr. Theodore J. Eastman: The bismuth did not stay put. Dr. George and Dr. Leonard, who made this examination, said that it suggested a colitis and possibly a tuberculous one. In the bottom of the diverticula were little pledgets of bismuth the size of the tip of the little finger, and neither by enema nor by bismuth meal was any portion returned in that part of the colon.

Dr. Cabot: So, as you understand the X-ray reports, the emphasis was on the colitis rather than on the diverticulitis.

Dr. Eastman: He thought it might possibly be a colitis secondary to a diverticulitis. I do not see mention of a Graham which was done at that time, in which the gall-bladder partly filled.

Dr. Cabot: Then it is neither very positive nor very negative. It is half-way.

Dr. Eastman: No. They could make no flat diagnosis.

Dr. Cabot: If we try to sum up the history, the outstanding facts are a rather persistent jaundice with gastro-intestinal symptoms not characteristic of any particular disease of the stomach or of anything else so far as I see. Then towards the end, two weeks before admission, comes a symptom from apparently quite another direction, suggesting something wrong with the uterus. It might be a fibroid. It might be various things.

Dr. Eastman: It did not amount to much.

Dr Cabot: Apparently we do not need to put much emphasis on this last chapter. What we have, then, is a woman bearing Dr. Bigelow's three marks of gall-stone disease, "fat, old, woman" being the etiology according to him. She weighs 186, she is fifty-five, and she is a woman. But other than that the evidence of gall-stones is poor. We have no clean-cut colic, no fever, no chill. The radiations of the pain are not characteristic, and aside from the general etiology there is not much to support it.

In general we say there are three common causes of jaundice: (1) what used to be called catarrhal jaundice, (2) cancer, (3) gall-stones; and so far as I see all of these as well as others should be in our minds.

NOTES ON THE PHYSICAL EXAMINATION

I should say that a very considerable proportion of all women whom one examines show as much pelvic tenderness as this, and I could not make any inferences from this pelvic examination.

There is nothing wrong with the urine apparently except bile.

Again, the blood shows bile and that is all.

The temperature, pulse, and respiration are essentially normal.

"Absence of liver dullness by percussion" can mean either a great deal or very little. It can mean a distended colon and nothing more. We are always skeptical of it, always want to repeat the examination and get it done at different times of day when the colon has been emptied so far as we can empty it. In Out-Patient Department examinations I used to demonstrate absent liver dullness due to distended colon in a patient obviously not sick at all. So one is always suspicious of such a statement as that, and ought to do all that can be done to get it verified. The fact that this medical consultant lays so much stress on it seems to mean that they had tried to verify it, that it had persisted after purgation and at various times of day.

I do not see how one can make any connection —I cannot anyway—between the intestinal signs revealed by X-ray,—colitis and diverticulitis, one or both,—and the jaundice. I know no way in which we can connect those two. As she has had little in the way of intestinal symptoms, we should focus on the jaundice rather than on the data about the intestine. The rest of the body is essentially negative,—nothing in the kidneys or nervous system or gastro-intestinal tract aside from these suggestions of diverticulitis. So it seems to me the more sensible thing to do is to take this from the point of view of the causes of jaundice.

How long has she had it? She has had it just over six weeks. We used arbitrarily to say catarrhal jaundice does not last more than six weeks. That is a perfectly arbitrary statement, which means that most of the cases with it clear up without any explanation in that time. If we were still holding to that it would be a very queer case of catarrhal jaundice. But we do not now believe in the mucous plug in the duodenal papilla. I have seen it just once in all my years here. I believe "catarrhal" means "infectious" cholangitis due to unknown organisms. I do not think we need to consider catarrhal jaundice.

I have said about all I can about gall-stones. We have done what we could to establish that diagnosis. All the facts are negative. That does not prove it is not gall-stones. One can have gall-stones with only the facts here present. But the chances are against it.

I do not see how anybody can exclude cancer. If I am asked where, statistically it is oftenest in the head of the pancreas. Cancer blocking the bile ducts is as much as we have a right to say.

The thing which the medical consultant evidently had in his mind, which we do have to keep in mind nowadays because of the frequency of that disease in the last ten years, is acute or subacute yellow atrophy. He was thinking of that when he was percussing the liver dullness.

I see nothing in this case by which we can rule that out. One often gets ascites with it. Often one does not. Before death one usually gets brain symptoms, convulsions or coma similar to what we call uremia. We have no suggestion of a cause for acute yellow atrophy and I think we always look for a cause. But we do not always find it by a great deal. We look for very large doses of arsenic in the treatment of syphilis, for chloroform, for phosphorus. But in many cases we do not find any such cause.

It seems to me, then, that the diagnosis here must, in the minds of those who operated on this patient, have rested between acute or subacute yellow atrophy (toxic hepatitis), and cancerous obstruction of the bile ducts; those two being probable, with the possibility still of gall-stones. If we take that liver dullness seriously of course acute yellow atrophy is the most probable. We can say that an ordinary cirrhosis can decrease liver dullness too. It can, but when it produces so much trouble it usually produces ascites, which is not present here. We have no evidence of syphilis of the liver,—a possible cause of jaundice. That is as far as I can go before we take the record of operation.

DR. EDWARD L. YOUNG, JR.: I think it is fair to say that in the ward there was no particular note made of the liver dullness being decreased, other than the medical examination, I think the day before the operation.

DR. CABOT: Did you see her yourself?

DR. YOUNG: I saw her. I did percuss the liver. I think perhaps Dr. Hoyt might say what it was when he saw her before. But my impression was not of painless jaundice. It was not severe pain, but it was not the absolutely painless jaundice that we see with cancerous obstruction.

DR. C. WENTWORTH HOYT: It was a condition varying from epigastric distress up to a rather mild pain, rather high in the abdomen, sometimes in the left, sometimes in the right,—usually the left. But nothing colicky.

DR. CABOT: Did you see this patient, Dr. Davis?

DR. LINCOLN DAVIS: Yes, I operated on her.

DR. CABOT: Taking what you knew before operation, is there anything that has not come out that ought to have come out?

DR. DAVIS: I think not. I was afraid that it was cancer. I thought there was a chance there might be silent stone in the common duct, or that it might be one of those rare infectious jaundices. I thought even if it were cancer possibly we might do a cholecystgastrostomy, that is connect the gall-bladder to the stomach and relieve the jaundice. But I hoped to find a stone in the common duct.

PRE-OPERATIVE DIAGNOSIS

Carcinoma of the pancreas with the possibility of stone in the common duct.

OPERATION

Ethylene. Incision through right upper rectus. A simple exploration revealed a small dark liver with numerous light scars, circular in shape and umbilicated in their center. The gall-bladder was contracted and hard. No stones were felt. The common duct was very much indurated. The upper edge of the pancreas was also indurated and felt on palpation suggestive of carcinoma. Several hard nodules were felt along the pancreas. The stomach and duodenum were negative. Adhesions between the gall-bladder and the colon and duodenum were separated with care. Free and persistent oozing started up. It was impossible to control this except by packing. The wound was closed. In spite of very gentle handling there was such persistent oozing that the wound was reopened and a handkerchief gauze packed down to the kidney bed. The patient left the table in fair condition.

FURTHER DISCUSSION

DR. CABOT: Is it fair to inquire what you thought it was at the end of the operation?

DR. DAVIS: I thought it was cancer, but I was not sure of it. I felt that there was nothing to do. It was not a stone in the common duct. It was, if I may say so, what we may call a nightmare operation,—uncontrollable bleeding and no vessels to clamp. Surgeons have that sort of nightmare at night; this was a daytime nightmare. She was under ethyl anesthesia and not very well relaxed. The pads up against the colon and against the stomach abraded the vessels of the walls so that they all began to ooze. Passing the hand down along the foramen of Winslow caused oozing. She seemed to bleed everywhere. The liver was small. I had never happened to explore a liver with cancer which was small. This was a liver that suggested very strongly cirrhosis, but the pancreas and the common duct suggested cancer. I also thought she had cancer of the gall-bladder.

DR. CABOT: There is nothing to add. On the whole, what do we think Dr. Mallory is going to say? A number of "hard" places have been mentioned,—the gall-bladder, the common duct, the pancreas—and certainly that is the evidence on which anybody who thinks this is malignant disease would rest. The account of the liver does not satisfy me for the liver of metastatic cancer, but then I do not know much about the liver. It is perfectly possible it is. It does not sound to me like any kind of cirrhosis that I know. It still sounds more like the thing we call acute yellow atrophy, in spite of these hard places which feel like malignant disease and of which I cannot give any explanation.

DR. DAVIS: You spoke of the number of cases in which surgeons report a hard pancreas not confirmed by the pathologist, and that is very true. I do not know of anything harder to de-

termine than cancer of the pancreas. Yet a surgeon is expected to determine whether he is dealing with cancer or not, and a good deal depends on his decision. I came in to this particular necropsy when Dr. Mallory was doing it, and I felt then very uncertain as to whether there was cancer or not. He had the liver exposed to view, and I said to Dr. Mallory, "From what you see of this liver, is that cancer?" And Dr. Mallory, being a pathologist and having a large post-mortem knife in his hand, kept making sections. I did not want him to do that. And then he said, "Yes, it is cancer."

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the pancreas with metastases to the liver.

DR. RICHARD C. CABOT'S DIAGNOSIS

Acute yellow atrophy of the liver, or
Possibly cancer of the biliary passages with metastasis in the liver.

ANATOMIC DIAGNOSIS

Primary carcinoma of the bile ducts.
Metastases to the liver.
Chronic cholecystitis.
Cholelithiasis.

DR. TRACY B. MALLORY: As Dr. Davis has told you, I had an unfair advantage over him. When I first opened the abdomen I certainly could not tell whether it was cancer or not. The liver was not enlarged. When we eventually weighed it we found it was 1450 grams. That is small rather than large. The surface was relatively smooth, with a large number of white areas on it varying from two millimeters to a centimeter in diameter. They were not raised. They were a little soft rather than hard, but the center of each was very definitely umbilicated. It seemed to me it was probably cancer, but I could not be sure of it. Further dissection showed, however, quite definitely that there was cancer of the common bile duct extending up along both hepatic ducts and invading the liver. The hard areas felt in the pancreas were enlarged metastatic lymph nodes there. The gall-bladder did not contain cancer. Its wall was tremendously thickened with a fibrous chronic inflammatory process, and it contained numerous stones.

There was a considerable amount of free blood in the abdomen, evidently the result of oozing, as no demonstrable cut vessels could be found.

DR. CABOT: It is rather consoling to us as clinicians that Dr. Mallory could not make the diagnosis until he came to the microscope. We cannot use a microscope during life.

CASE 13522

AN UNUSUAL CAUSE OF EPIGASTRIC PAIN

SURGICAL DEPARTMENT

First admission. A married American woman of fifty-four entered the hospital June 22 complaining of pain in the epigastrium.

Six weeks before admission she had a knife-like pain in the pit of the stomach which made her cry out. It radiated to the umbilicus and lasted five minutes. During the following weeks she had five similar attacks by day and three by night. The attacks had no relation to meals. Pills given by her physician gave no relief. Five weeks before admission she had dull gnawing pain in the epigastrium extending to both flanks, constant, not aggravated by food, although she felt bloated after meals. This persisted until admission. Three weeks before admission she began to show jaundice, which increased gradually, reaching its greatest intensity a week before admission. This also persisted. She thought her abdomen had been increasing in size recently. She had no nausea, vomiting or belching of gas. Her appetite had grown very poor. In five weeks her weight had fallen from 150 to 132 pounds. Her urine had been dark. During the past week she had had on an average five watery stools a day.

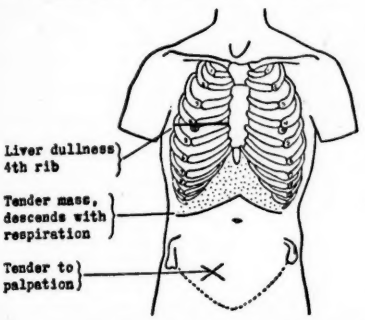
Her family history is not significant.

She had a past history of general nervousness and hypertension found at the Out-Patient Department of this hospital ten years before admission and general nervousness five years before admission. Her history shows nothing else of significance except indigestion off and on for the past year—a lump of gas in the throat after meals, relieved by peppermint. She passed the menopause nine years before admission.

Clinical examination showed a well nourished, moderately jaundiced woman lying in no acute distress. Movements were executed with difficulty, apparently on account of weakness. Sclerae icteric. The skin showed numerous small hemangiomas and over the upper trunk a few spidery telangiectases. The abdominal veins were distended. Heart and lungs not remarkable. Blood pressure 110/50. Abdomen dome-shaped, tense; no fluid. Palpation even in a hot tub difficult because of tense wall and tenderness over the region corresponding to the stippled area in the diagram. There was apparently an enlarged liver extending halfway to the umbilical line in the right upper quadrant. There was a mass in the left upper quadrant which might have been either spleen or liver. The mass or masses were very tender and descended on respiration.

Urine normal in amount, specific gravity 1.025 to 1.010, smoky or dark at all of four examinations, the slightest possible trace of albumin once, questionable twice, bile strongly positive

three times. Blood: 8,400 to 19,050 leucocytes, polynuclears 65 per cent., hemoglobin 80 per cent., reds 4,800,000, icteric index 33 to 35, non-protein nitrogen 31 milligrams, clotting time 7 minutes. Fragility test commenced at .36 per cent., complete at .22 per cent. Clot retraction fair, in appearance like post mortem. Stools yellow or brown, guaiac negative. Wassermann negative. Vomitus brownish, much mucus, no macroscopic blood, guaiac negative.



Rosenthal bromsulphalein test, dose 2.4 cubic centimeters; after five minutes 100 per cent., after thirty minutes 60 per cent.

X-ray examination showed the diaphragm high on both sides probably secondary to an abdominal condition. The chest was essentially negative. The lower border of the liver could not be definitely distinguished. The spleen was not definitely outlined.

Temperature 102.1° to 98.4°, with daily afternoon rise. Pulse 80 to 103. Respirations 20 to 26.

A medical and a surgical consultant agreed in making no diagnosis but advised operation. The patient and her husband refused it. June 28 she was discharged.

History of interval. During the next four days she had continuous epigastric pain, especially a gnawing on the left side. She grew constantly weaker and was unable to take anything except beef extract.

Second admission, July 2.

On clinical examination she was deeply jaundiced. Abdomen large, distended, tympanitic, with obvious shifting dullness in the flanks and fluid wave. The liver edge was down about halfway to the umbilicus, apparently smooth but hard to feel and very tender. Blood pressure 110/75.

Before operation amount of urine normal, specific gravity not determined, bile positive. Blood: 21,200 leucocytes, hemoglobin 65 per cent., reds 3,980,000. Wassermann moderately positive. Icteric index 45. Bleeding time 3 minutes. Clotting time more than 30 minutes July 2, between 7 and 11 minutes July 5.

Before operation temperature 101.1° to 97.8°, pulse 90 to 120, respirations 20 to 36.

July 5 operation was done. The patient made a good operative recovery and two days later felt much better. July 9 the pain returned and she required considerable morphia. There was moderate distention. Two magnesium, glycerin and water enemas were given daily to keep down the distention, which however persisted. She took fluids only. She continued to have much pain. There was slight blood discharge from the rectum with the enemas. July 14 she had a rather profuse nosebleed controlled by packing. There was also a good deal of blood by rectum. Moderate distention was constant. July 18 and 19 she had an increased amount of rectal hemorrhage and nosebleed. July 19 she was irrational and the next day more so. She lapsed into coma and July 20 died.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

The pain is not characteristic of any one thing.

The fragility test is within normal limits.

The Rosenthal test is an attempt to show whether the liver will take the bromsulphalein from the blood. It shows retention of the test drug in the blood. What the normal figures are I don't know, but this shows an inability of the liver to do what it normally should do.

Miss Painter: Anything at all after half an hour is abnormal. After five minutes anything is normal up to fifty per cent. But if there is a great deal of ascites it throws out the dosage, which is proportionate to the body weight.

Dr. Young: It shows that the liver is damaged.

I am glad they refused to make a diagnosis, because it sounds very puzzling to me. The fact that she has dilated veins in the abdomen of course points to interference with the portal circulation. We have evidence pointing towards a damaged liver,—jaundice and distended abdominal veins and inability of the liver to eliminate the test drug. But this does not fit into the ordinary picture of cirrhosis, because that is an insidious disease and does not come with attacks of knife-like pain, freedom from trouble between times, and a course of only six weeks. She has a certain leucocytosis at some time, and temperature. Is it possible that this is an acute infectious hepatitis with an enlarged liver and damage from that engrafted on a cirrhosis? If so the pain would be accounted for by the acute distension of the capsule of the liver.

Is it possible that this is a straight surgical condition with cholelithiasis? It certainly does not ring true to any description of symptoms which we ought to have in that condition. The distension of the abdominal veins suggests that it has in fact been going on longer than the patient's knowledge would suggest. The tenderness that is spoken of low in the abdomen I cannot account for.

I assume that operation was advised on the basis of a diagnosis of cirrhosis or of some condition atypical in itself which might be relieved by operation.

What do you think, Dr. Cabot?

DR. CABOT: It sounds more like what we used to call subacute yellow atrophy, or subacute hepatitis.

DR. YOUNG: Acute infectious hepatitis?

DR. CABOT: I do not like to call it infectious. Certainly we get it with chloroform and other things that are not infections. I think the pain is the hardest thing to bring in under that diagnosis. Most of the cases do not have any such pain.

DR. YOUNG: Of course there used to be the condition called biliary cirrhosis, supposed to be very rare, hitting mostly young people. Is there such a disease as that to-day?

DR. CABOT: I think so. Do you, Dr. Mallory?

DR. TRACY B. MALLORY: Yes, I think so. But I think it is a very rare disease.

DR. YOUNG: The smoothness of the liver would presumably rule out a malignant condition, which sometimes does give a large liver without the primary focus of malignancy being obvious.

Did she have any intravenous calcium at any time?

MISS PAINTER: I do not see any recorded.

DR. YOUNG: I do not see anything to make me consider liver abscess. There is no etiology that is obvious. It is not the septic temperature that goes with that, and there is every evidence of damage to the portal system which the abscess would not cause. I do not see how, with a definitely smooth liver, we can seriously consider malignancy; and a rare condition such as hydatid cyst ought not to give the evidence of diffuse cirrhosis such as this has. I am going to say that I cannot make a diagnosis and have not even a good bet other than on atypical cirrhosis.

DR. CABOT: I should like to say subacute toxic hepatitis.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Atypical cirrhosis of the liver?

PRE-OPERATIVE DIAGNOSIS

Cholecystitis.
Cholelithiasis.

OPERATION

Gas-ether. Right rectus incision splitting the muscle in its inner third. The liver was found to be studded with large metastases of cancer. The gall-bladder was small and contracted around stones. The primary lesion could not well be made out. No section could be found that could be easily removed for examination.

FURTHER DISCUSSION

DR. YOUNG: I did say that I would not consider cholelithiasis seriously. I mentioned it to throw it out. This is very interesting, because we have considered all the diagnoses made and that is the story.

The blood by rectum they say was due to the enemas. That is not necessarily so. They may have stirred up primary foci in the bowel.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of liver.

DR. EDWARD L. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Atypical cirrhosis of the liver?

ANATOMIC DIAGNOSES

1. *Primary fatal lesions.*

Alcoholic cirrhosis of the liver.
Acute toxic necrosis of the liver.

2. *Secondary or terminal lesions.*

Bronchopneumonia.
Ascites.
Icterus.

3. *Historical landmarks.*

Healed duodenal ulcer.
Operative wound, abdominal exploration.

DR. YOUNG: In other words, we cannot believe what our hands tell us, even with the hand in the abdomen, unless it is very definitely backed up by facts.

DR. TRACY B. MALLORY: I will read the description of the liver. It weighed 2385 grams, —considerably enlarged. The surface was very slightly irregular without any definite individual prominences. It was greenish brown in color, in consistency soft and flabby, but when the attempt was made to tear it it proved tougher than normal. In cross section numerous slightly enlarged lobules showing deep red centers stood out quite prominently. Between the lobules deeply green-stained bands of fibrous tissue could be made out. In other words we had a cirrhosis. There were, incidentally, no stones in the gall-bladder.

There is a slight further surprise about it. The patient did have a longstanding cirrhosis of the alcoholic type,—quite definite alcoholic hyalin was present in a number of cells. On the other hand, between eight- and nine-tenths of the liver cells were completely necrotic

The case is apparently one of acute toxic necrosis of the liver, as Dr. Cabot suggested, in an already hypertrophic, cirrhotic liver. Consequently the liver did not shrink and atrophy during the course of the month during which the acute symptoms have lasted, as one might have expected it to.

An acute bronchopneumonia was a contributing cause of death.

The spleen was enlarged, but no more so than is common in most cases of cirrhosis of the liver. The other organs were essentially negative.

DR. CABOT: Do you feel at all uncomfortable in making a diagnosis of both these kinds of cirrhosis in the same liver?

DR. MALLORY: It is a very unusual condition, but I feel quite sure of it in this case. I have had two other pathologists go over the slides with me, and they both agree that that is the most probable explanation. That is, the necrosis in this case is an acute affair of only a few weeks' duration, and there is definite evidence of a cirrhosis that must run back years.

DR. CABOT: There is an interesting parallellism between this case and one I saw at the Peter Bent Brigham Hospital. The poor clinician had said there was no disease, the surgeon triumphantly demonstrated it at operation, a cancer with metastases, and the pathologist still more triumphantly threw him down and showed there was no disease.

RESUME OF COMMUNICABLE DISEASES IN MASSACHUSETTS

NOVEMBER, 1927

GENERAL PREVALENCE

The total reported incidence of communicable disease for November was not unusual.

Poliomyelitis was the only common disease with more than a normal number of cases reported. The incidence has been decreasing very rapidly from the peak in October, but is still high as compared with the usual November incidence. Whereas in October the incidence was about nine times as high as expected, the incidence in November was about six times as high as expected.

The number of cases of diphtheria, lobar pneumonia, scarlet fever, tuberculosis, typhoid fever, measles, whooping cough, influenza, German measles, chickenpox and mumps reported indicates that these diseases were present within endemic limits.

During November none of the common communicable diseases reported had an unusually low incidence.

RARE DISEASES

Anterior poliomyelitis was reported from Adams, 1; Andover, 5; Arlington, 1; Ayer, 1; Belmont, 2; Berkeley, 1; Bernardston, 1; Boston, 30; Braintree, 1; Brockton, 2; Brookline, 3; Cambridge. 6; Chelsea, 1; Dedham, 3; Douglas, 1; Everett, 4; Fall River, 7; Framingham, 1; Gardner, 1; Gloucester, 2; Greenfield, 1; Haverhill, 3; Hingham, 1; Ipswich, 5; Lenox, 1; Lexington, 1; Lowell, 6; Lynn, 5; Malden, 2; Mansfield, 1; Medford, 3; Middleton, 2; Milford, 1; Millbury, 1; Milton, 1; New Bedford, 2; Newburyport, 1; Newton, 2; North Attleboro, 1; Northbridge, 1; Pepperell, 1; Provincetown, 1; Quincy, 4; Revere, 1; Rowley, 1; Salem, 5; Saugus, 1; Somerville, 3; Springfield, 1; Sutton, 1; Swansea, 2; Topsfield, 2; Waltham, 1; Wareham, 1; West Boylston, 1; Westwood, 1; Winchendon, 1; Worcester, 2; Wrentham, 1; total, 146.

Anthrax was reported from Lynn, 1; total, 1.

Dog-bite requiring anti-rabic treatment was reported from Belmont, 1; Billerica, 3; Boston, 6; Chelmsford, 3; Danvers, 1; Everett, 2; Fall River, 1; Hingham, 1; Lowell, 6; Malden, 3; Melrose, 2; Newton, 1; Peabody, 3; Quincy, 4; Rehoboth, 1; Revere, 4; Somerville, 1; Winchester, 2; Winthrop, 1; total, 46.

Encephalitis lethargica was reported from Boston, 4; Lynn, 1; Salem, 1; total, 6.

Epidemic cerebrospinal meningitis was reported from Boston, 3; Fall River, 1; Lawrence, 1; Malden, 1; Medfield, 1; Melrose, 2; Uxbridge, 1; total, 10.

Septic sore throat was reported from Boston, 4; Chelsea, 1; Fall River, 2; Springfield, 1; Worcester, 1; total, 9.

Smallpox was reported from Plainville, 1; total, 1.

Tetanus was reported from Brockton, 2; Lowell, 1; total, 3.

Trachoma was reported from Boston, 1; Haverhill, 1; Plymouth, 1; total, 3.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES

Disease	Cases in entire population				Case rates per 100,000 population		
	Nov., 1927	Nov., 1926	Prosodemic index	Epidemic index	Nov., 1927	Nov., 1926	Expected rate‡
All causes	6,578	5,900	—	—	154.1	140.0	—
Anterior poliomyelitis	146	26	23*	6.3†	3.4	.6	.5
Diphtheria	542	418	629*	.9†	12.7	9.9	14.7
Measles	1,221	161	1,116*	1.1†	28.6	3.8	26.1
Pneumonia, lobar	324	265	326*	1.0†	7.6	6.3	7.6
Scarlet fever	968	1,191	845*	1.1†	22.7	28.3	19.8
Tuberculosis, pulmonary	383	386	280*	1.4†	8.9	9.2	6.6
Typhoid fever	39	43	37*	1.1†	.9	1.0	.9
Whooping cough	606	442	587*	1.0†	14.2	10.5	13.7
Chickenpox	953	1,232	—	—	22.4	29.2	—
German measles	57	36	—	—	1.3	.8	—
Influenza	37	46	—	—	.9	1.1	—
Mumps	402	599	—	—	9.4	14.2	—
Tuberculosis, other forms	55	58	—	—	1.3	1.4	—

*This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

†This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927, issue of the JOURNAL.

‡Calculated from the Prosodemic Index.

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THE RABIES PROBLEM

COMMISSIONER BIGELOW of the Massachusetts Department of Public Health has acted wisely in recommending that all dogs be restrained from running loose for a period of ninety days. Dog rabies has not only shown an alarming increase during the past few years, but for the year 1927 it has actually increased, it is said, 250 per cent. over the figures for 1926. The mad dog may justly be said to strike terror into the hearts of a community, for he carries death in his fangs and is obsessed with the desire to bite what living creatures come into his path before he himself succumbs to his dreadful disease. The very fact that the rabid dog may travel great distances as a result of his malady accounts, in part, for its insidious spread, and serves as a potent argument in favor of restraint.

Rabies has always been present among the dogs of this country, for we do not enjoy the insular protection which Nature has accorded the British Isles, and which is made use of through a rigid quarantine law. Continental Europe, on the other hand, has long been a focus of the disease which has been endemic among the wolf packs of its forests. Indeed, until the discovery of Pasteur somewhat mitigated its terrors, the bite of a mad wolf was considered to seal a person's doom.

From 16 to 24 per cent. has been considered the morbidity rate following bites by rabid animals; the mortality rate is practically the same, and a rate as low even as this is probably due to the fact that the animal's teeth may be cleansed of their virus in bites through clothing. Bites about the face are particularly dangerous, for so rapidly may the virus reach the brain following them that even the Pasteur treatment may be ineffective in checking it Following bites in other locations the virus may lie dormant for as long as a year before giving rise to a fatal infection.

Persons bitten by dogs suspected of having rabies should receive the Pasteur treatment without delay unless it can be proven that the biting animal was not rabid; dogs suspected of having rabies should be kept chained and under observation until the disease has reached a stage where a diagnosis can surely be made. Persons who have been in intimate contact with rabid dogs even without being bitten should receive a modified Pasteur treatment or the fourteen day Semple treatment with killed virus. This is especially true of those who may have had cuts or open skin lesions during the period of their exposure.

The active immunization of dogs is not altogether satisfactory, for frequently it fails in its effect, and at best must be repeated annually. Universal immunization, however, even taking into account its failures, should certainly help materially in checking the spread of the disease, and if the present prevalence of rabies continues, the question of compulsory vaccination must be seriously considered.

On the whole it is the stray dog which constitutes the menace to the human being and to the family dog, and a restraint order such as is now in effect, if vigilantly enforced, should result in a general elimination of these strays. In any discussion which affects the public health there are, of course, always a certain number of misinformed individuals ready to raise their voices on the slightest provocation; in respect to rabies they will deny its existence, decry the severity of the order, and in general make exhibitions of their ignorance or of the fact that they regard human life less highly than the pleasure or convenience of their pets. Unfortunately, even municipal authorities will occasionally cater to these individuals rather than accept the judgment of those who are qualified to deal with the problem. The JOURNAL places itself on record as being squarely behind Dr. Bigelow in his decision.

STUTTERING AND HIDDEN LEFT-HANDEDNESS

One of the most distressing of human ills is stuttering. The victim, often endowed with an intellectual capacity above the average, is not only a constant source of annoyance and embarrassment to himself, but his friends have to bear the burden with him to a degree that often robs the friendship of much of its pleasure, inasmuch as the foundations of close association are usually built on the exchange of ideas by word of mouth. Although the old *conversazione* of John Hunter's day has gone out of fashion, the informal "lecture," as a means of spreading ideas among our friends, has not only supplanted it, but, judging from the number of "meetings" held throughout the winter months in Boston, has far exceeded the eighteenth century method. All men, and women, of prominence today are asked sooner or later (and often sooner) to speak at this or that function: the Rotary Club, the Y. M. C. A., the college gathering. Few people speak well, many badly, but the stutterer must always be a listener except on rare occasions, when he is among more intimate friends. Even in small groups the difficulty is not entirely eliminated and the audience, in complete sympathy with the speaker, may suffer many moments of embarrassment also, in their subconscious efforts to aid the halting voice. This sort of "aid," however, offers no real help, and the treatment of stuttering must be along other lines.

Before any realization of the mental aspect of stuttering, Dieffenbach divided the lingual muscles with doleful results. The problem does not lie in the peripheral mechanism of speech, even as complicated as they are, but rather in the cerebral, and even more complicated, pathways, over which pass the impulses which control the integrative function of speech. Some striking evidence, bearing out the theory of cortical control, has recently been put forth by Orton in the November number of the *Archives of Neurology and Psychiatry*, (1927, *18*, 671). He states that there are a number of instances recorded in the literature of the onset of stuttering when a normally left-handed child is coerced into using the right hand for writing and of recovery when the use of the left hand is permitted. He also gives the story, as an excellent example of this phenomenon, of a college student, aged 18, who was naturally left-handed and who had been permitted to use the left hand in writing during his first two years in school. He was required, in the third grade, to shift to the right hand. The following year he began to stutter. Nine years later, although the boy considered himself right-handed, it was found that "he had a markedly greater facility with the left." He was advised to use his left hand for everything and within seven months after the "shift", the stuttering had entirely disappeared.

With such an experience in mind, Orton, naturally, supports the theorem that stuttering is often an expression of *confusion in cerebral dominance* and he summarizes his arguments in the following words: "The larynx and other organs of speech, unlike the limbs, are not independent, paired organs, but are single mechanisms, though activated by paired groups of muscles on either side of the midline. The possibilities for great difficulty here through confusion in dominance or through alternating dominance are obvious. Under this conception, stuttering would be more closely related to the apraxias than to the ataxias. The act of stuttering is not unlike an ataxia, and this has led to the suggestion that the cerebellum may be at fault. One does not, however, observe stuttering as a result of demonstrable cerebellar lesions and there are, moreover, reasons to believe that speech and writing are both essentially integrative functions of the higher cortical arcs of the dominant hemisphere."

While the theory is not entirely new, it receives striking confirmation in Orton's hands. One would do well to follow his lead in investigating cases of this troublesome disorder. Is it not possible that some adults have forgotten the incident of changing from the left to the right hand in childhood, the "shift" having been carried out over a number of months or years by the combined efforts of the mother, nurse and school teacher. As in Orton's case, the facility of the left hand may be hidden by the constant use, as an adult, of the right. A limited investigation ought to prove the point and perhaps would lead to the cure of the patient.

THE NECESSARY AMOUNT OF SLEEP

Dr. F. A. Moss, Professor of Applied Psychology of George Washington University claims that the theory of the necessity of eight hours' sleep is erroneous. He even states his opinion that eight hours' sleep as a health requirement "is an outworn Anglo-Saxon myth" and is a bad habit which cuts down efficiency and dissipates latent powers. His ideas are endorsed by Dr. H. L. Hollingworth, psychologist at Columbia University. Dr. Moss recommends only six hours' sleep which would give more productive years between the ages of twenty and sixty.

Experiments conducted at the Mellon Institute, Pittsburgh seem to bear out these conclusions, according to Dr. Moss.

Dr. Johnson of Pittsburgh concludes that our state of mind determines the reaction to sensations which follow lack of sleep. He is quoted as follows:

"Our state of mind has a great deal to do

with this habit of sleep. If we do not get our full eight hours at night we are all too ready to blame every ill on lack of sleep. Much of the tired feeling subsequent to going a night without our full quota of sleep exists only in the mind. We think we ought to feel fatigued, consequently we do feel fatigued."

The report does not give any information with respect to this claim as to whether Dr. Johnson goes as far as some very good people who claim to believe that all unpleasant sensations are due to a maladjustment of the mind and the invasion of error.

Much that these scientists affirm is undoubtedly true, but it is probably equally true that there is a tremendous variation in the behavior of the human mind and body following loss of sleep.

Physical and mental stability varies so much, and nutritional needs are so dissimilar in various types of persons that one may, with reason, be skeptical with respect to such sweeping statements.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

CHUTE, ARTHUR L. M.D. Harvard Medical School 1895, F.A.C.S., Assistant Professor of Genito-Urinary Surgery at Tufts College Medical School, Genito-Urinary Surgeon at St. Elizabeth's Hospital, Consulting Genito-Urinary Surgeon at the Robert Bent Brigham Hospital, Boston Dispensary, Josiah B. Thomas Hospital at Peabody, Newton Hospital, Leonard Morse Hospital at Natick and Somerville Hospital at Somerville. His subject is: "The Desirability of a Second Removal of the Prostate in Certain Cases of Carcinoma." Page 1207. Address: 352 Marlboro St., Boston.

REID, WILLIAM D. A.B., M.D. Harvard Medical School 1909, Assistant Professor of Cardiology at the Boston University School of Medicine, Associate to the Evans Memorial, Assistant Visiting Physician at the Massachusetts Homeopathic Hospital, Cardiac Consultant to the Newton Hospital. His subject is: "Auricular Fibrillation in an Apparently Normal Heart." Page 1213. Address: 510 Commonwealth Ave., Boston.

BRYANT, JOHN. A.B., M.D. Harvard Medical School 1907, Formerly Director of Convalescent Department of the Walter Reed General Hospital, Consultant of Division of Physical Reconstruction at Surgeon-General's Office, Now Medical Assistant in Problems of Convalescence at the Massachusetts General Hospital and Consultant to Burke Foundation. His subject is: "Convalescence in Boston." Page 1215. Address: 282 Berkeley St., Boston.

MILLER, ALBERT H. A.B., M.D. Columbia University 1898, Anaesthetist at the Rhode Island Hospital and the Memorial Hospital, Consulting Anaesthetist at the Providence City Hospital, Providence Lying-In Hospital, Butler Hospital, St. Joseph's Hospital and the South County Hospital, President of the Eastern Society of Anaesthetists and the Boston Society of Anaesthetists. His subject is: "The Origin of the Word 'Anaesthesia.'" Page 1218. Address: 131 Waterman St., Providence, R. I.

O'HARA, DWIGHT. B.S., M.D. Harvard Medical School 1919, Physician for Contagious Diseases at the Waltham Hospital, Junior Visiting Physician at the Boston City Hospital, Lecturer on Therapeutics and Instructor in Clinical Medicine at Boston University School of Medicine, Assistant in Medicine at Harvard Medical School. His subject is: "Necropsies for the Practitioner." Page 1222. Address: 751 Main St., Waltham.

TUTTLE, GEORGE H. A.B., M.D. Harvard Medical School 1891, President of Emerson Hospital Staff at Concord. His subject is: "Modern Conception of Normal Carbohydrate Metabolism." Page 1225. Address: South Acton, Mass.

MORSE, JOHN LOVETT. A.B., A.M., M.D. Harvard Medical School 1891, Professor of Pediatrics Emeritus at Harvard Medical School, Consulting Physician at Children's and Infants' Hospitals, Member: New England Pediatric Society, American Pediatric Society, Association of American Physicians and Boston Obstetrical Society. His subject is: "Progress in Pediatrics." Page 1226. Address: 483 Beacon St., Boston.

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Why Listen to the Foetal Heart in Labor?

DURING labor it is of vital importance that the attending physician should know the condition of the foetus, and observation of the foetal heart at frequent intervals, particularly during the second stage, is the most reliable method we have for noting the condition of the baby in utero.

The foetal heart rate, in the average case, varies between 125 and 150 per minute, with some difference if observation is made during a uterine contraction, though this change in rate is slight and transitory. In certain cases a much higher rate is noted and ordinarily the more rapid foetal heart is not of serious import, unless the change is excessive, though in any very high rate careful examination of the patient should be made to rule out any abnormality which might be a causative factor.

Foetal heart rates below 120, and particularly

if the rate reaches or even approaches 100 per minute, are definitely serious and mean that some interference with foetal circulation is present. Statistics gathered from various clinics show that the majority of infants born with a foetal heart rate close to 100 are asphyxiated and are revived with difficulty, while those with a rate below 100 show a very large mortality.

Interference with foetal circulation in utero may be due to several causes but the most common is prolonged labor, where there is undue pressure on the foetal head, from some impediment to the normal progress of labor such as an abnormal position of the vertex or an unrecognized disproportion between the pelvis and foetus and as a result, constant pounding of the foetal head against the resisting tissues to the point of brain cell or vagus disturbance. Another common cause is interference with cord circulation such as pressure of the presenting part on a loop or cord or tightening of kinks or knots in the cord loops around the baby's neck. Frequent auscultation is wise, and advised by some writers as often as every ten or fifteen minutes. To facilitate listening to the foetal heart, a stethoscope with a head band similar to the head mirror used by laryngologists has been devised and is in constant use in many hospitals. This frequent observation of the foetal heart is important because conditions may change rapidly and a normal rate at the beginning of labor, especially in the cord pressure type of case, may slow down to the danger zone without any external signs of maternal or foetal distress.

When the foetal heart rate is found to be abnormal, careful observation and examination of the patient should be made to determine, if possible, the cause and also to determine the advisability of termination of labor in the interest of the baby.

To summarize, we should listen to the foetal heart in labor at frequent intervals to the end that foetal distress be noted early and treatment instituted before this condition has reached a point where foetal life is lost or in serious jeopardy.

Questions of a similar nature to the above will be discussed in the JOURNAL each week. They may be addressed to the Clerk of the Committee, in care of the JOURNAL and will be answered by members of the Committee of the Section of Obstetrics and Gynecology.

MISCELLANY

LEGISLATION AGAINST VIVISECTION

Colorado Medicine in the issue of December, 1927, reports that the New England Anti-Vivisection Society is planning for the introduction of a bill in Congress exempting dogs from vivisection.

The Committee on State and National Legislation will probably take appropriate action.

LIST OF PHYSICIANS REGISTERED BY THE MASSACHUSETTS BOARD OF REGISTRATION IN MEDICINE IN EXAMINATION OF NOVEMBER 8-9-10, 1927

Adams, Gertrude Hertha, 1185 Boylston Street, Boston (Suite 3).
Belson, Maurice Oscar, Monson State Hospital, Palmer.
Cain, Norman Hugh, 147 Milk Street, Boston.
Canter, Benjamin Meyer, 530 West 124th Street, New York City.
Caplan, Abraham Nathan, Boston Sanatorium, Mattapan.
Caradonna, Henry, 702 Chandler Street, Worcester.
Cattell, Richard Bartley, 605 Commonwealth Avenue, Boston.
Celce, Frederick William, 399 Appleton Street, Holyoke.
Chance, Albert Elkanah, Care of Martin, 76 Humboldt Avenue, Boston.
Danforth, Clifford Franklyn, 285 Plymouth Street, North Abington.
Deich, Jacob Frank, Carney Hospital, South Boston.
Donabedian, George, 3 Carroll Street, Worcester.
Dretler, Lewis Robert, Boston City Hospital, Boston.
Dumas, Charles Edward, 71 Jacques Avenue, Worcester.
Ferrini, Peter, 10 Milton Street, Brockton.
Freedman, Harold Jacob, Massachusetts General Hospital, Boston.
Gettes, Charles, Jewish Hospital, York and Tabor Streets, Philadelphia.
Goodale, Ella Jocelyn, Belchertown State School, Belchertown.
Groves, Pattie Johnston, Mt. Holyoke College, South Hadley.
Hall, Dupre Meriwether, Danvers State Hospital, Hathorne.
Hicks, James Bryan, 605 Commonwealth Avenue, Boston.
Hudson, Henry William, Jr., 368 Riverway, Boston.
Kaszett, Peter William, 83 Arlington Street, Lawrence.
Klein, Israel, Monmouth Memorial Hospital, Long Branch, N. Y.
Lalor, Thomas Joseph, Jr., Central Street, Millville.
Lane, George Martin, 882 Hopkinson Avenue, Brooklyn, N. Y.
Langevin, William Edward, Fall River General Hospital, Fall River.
Lubinsky, Henry, Fall River General Hospital, Fall River.
Navarro, Vicente Aguirre, Medfield State Hospital, Harding.
Olson, Joseph Merrill, Cambrige City Hospital, Cambridge.
Peters, Andrew, 46 Bartlett Avenue, Pittsfield.
Ramin, Benedict, Boston Sanatorium, Mattapan.
Remy, Lorenzo Albert, Massachusetts General Hospital, Boston.
Rhoads, Cornelius Packard, Boston City Hospital, Boston.
Rhymes, Lester Harold, New England Sanitarium, Melrose.
Richards, Hazel Hortop, Foxboro State Hospital, Foxboro.
Rothschild, David, State Hospital, Foxboro.
Sawyer, Joseph Harlan, 165 Warwick Road, Melrose.
Schleifstein, Joseph Isaac, 1572 Macombs Road, New York City.
Schwartz, Abraham Louis, Union Hospital, Fall River.
Shulman, Simon, 36 Plantation Street, Worcester.
Slowick, Francis Arthur, 759 Chestnut Street, Springfield.
Vogt, Edward Charles, 300 Longwood Avenue, Boston.
Wood, Marshall Stephen, 230 Columbus Avenue, Pittsfield.

RECORD OF CANDIDATES REGISTERED AND REJECTED

College	Registered	Year of Graduation	Rejected	Year of Graduation
Massachusetts College of Osteopathy	4	1927	1	1923
			1	1925
			4	1926
			7	1927
University of Montreal			1	1921
			4	1925
			1	1927
American School of Osteopathy			1	1921
Kirksville College of Osteopathy and Surgery			3	1926
			2	1927
Middlesex			1	1922
			3	1923
			2	1925
			2	1926
Kansas City University of Physicians and Surgeons			1	1926
			3	1927
Des Moines Still College of Osteopathy			3	1927
Boston College of Physicians and Surgeons			1	1926
			3	1927
Chicago Medical College			1	1925
Philadelphia College of Osteopathy			3	1927
Harvard Medical College	1	1924		
	3	1925		
	3	1927		
Medical University, Coimbra			1	1927
College of Physicians and Surgeons, Columbia	1	1914		
College of Physicians and Surgeons, New York	1	1894		
Chicago College of Osteopathy			1	1927
Tufts Medical	1	1923		
	17	1927	4	1927
Pennsylvania Women's Medical College	1	1926		
McGill Medical School	1	1922		
	1	1927		
National University, Greece			1	1923
Temple University	1	1926	1	1926
College of Medical Evangelists	1	1927		
University of Maryland	1	1925		
Boston University	1	1924	1	1926
	1	1926		
	2	1927		
University do Porto			1	1925
Johns Hopkins	1	1924		
State University of Iowa	1	1923		
Jefferson	1	1922		
University of Warsaw			1	1926
Total number registered			44	
Total number rejected			59	
Total number examined			103	

ATTACKS OPERATION OF MATERNITY ACT

The administration of the Sheppard-Towner act for the promotion of maternity and infant welfare and hygiene is serving to enlarge Federal domination over intrastate activities, according to an article just published by the American Medical Association Bulletin. The article was written by Dr. W. C. Woodward and J. W. Holloway, Jr., of the Bureau of Legal Medicine and Legislation of the association.

After pointing out that while the law does not specifically define the terms "maternity" and "infant" the article quotes statements by the sponsors of the act in Congress to show that it was intended to reduce the number of maternal deaths incident to childbirth and the number of deaths of infants under one year of age.

The article then cites the approval by the Board of Maternity and Infant Hygiene of plans submitted by some of the coöperating States for activities "seemingly remote from those named in the act."

SEES DOMINATION IN STATES

"The act seems to have been intended only to provide funds through which Federal officers could dominate health activities immediately related to maternal and infant hygiene," says the article.

"Here one can see from official records how funds so provided have been used to acquire the right of supervision and control over special work for the boys' and girls' clubs at the State fair in Colorado; over the activities of the State health officer in Kentucky; over the examination of milk, of water and of specimens submitted for determination as to the presence of hookworms and other parasites in Louisiana; over a survey of crippled children in Maryland; over the activities of a laboratory technician in Montana; over a survey of certain milk supplies in New Mexico; over orthopedic clinics and certain postgraduate medical education in New York; over pediatrician fellowships in Ohio; over the activities of a milk technician in South Carolina; over scholarships for nurses in Virginia; and so on.

"That the activities named are activities in which the States may properly engage no one can deny. That such activities within a State should be supervised and controlled by Federal officers may well be denied. * * *

"The Constitution gives to the Federal Government almost unlimited taxing power. It gives to the States almost unlimited power to protect and promote the health of their people, free from Federal interference. The Sheppard-Towner act constitutes a device through which the right of the Federal Government to tax and the right of the State to control its own health activities may be bartered one for the other.

"The Federal Government, through its taxing powers, collects money either directly or indirectly from the people of the several States. Through the Sheppard-Towner Maternity act it agrees to pay back to the people of the States, on certain conditions, some or all of the money thus taken, and in some cases more. By the return of such money the Federal Government offsets or negatives the collection of it by taxation in the first instance.

SAYS STATES MUST CEDE RIGHT

"But the only condition on which the Federal Government will return the money thus collected from the people of the States is that the States, in return therefor, cede to the Federal Government their constitutional right to supervise and control health activities within their own borders, free from Federal supervision and control.

"If our Government is to continue as a dual Government, on its present constitutional basis, it seems essential that neither Congress nor any State Legislature sanction any such system of barrier. It is vital,

however, that if Congress or any State Legislature sanctions any such barter, the limits within which it may be carried on be clearly defined by the legislative body itself. They must not be left to be determined by Federal boards, bureau chiefs or other administrative officers."—*New York Times.*

CONTROLLING SMOKE

The appropriation of $300,000 a year asked by Health Commissioner Harris for control of the smoke nuisance in New York is based on estimates made by the chief of the technological division of the United States Bureau of Mines that about $50,000 per million inhabitants is sufficient. The plan which the Health Commissioner is advocating may therefore be said to be based on the recommendations of experts. Fortunately, a deal of testimony is available regarding experience in other cities. The field is no longer completely unexplored. Even here in New York much was learned during the brief period when the existing regulations were relaxed owing to the shortage of anthracite.

Dr. Harris's proposal is divided into three parts: the establishment of an educational campaign, the creation of a board of experts to pass on new devices and to issue licenses, and a corps of enforcement agents. Other cities have accomplished much with educational work It has proved possible to show the owners of industrial plants that it pays to use suitable control measures. Everywhere, however, the most difficult task has been to reach the individual householder. This will undoubtedly continue to be the case.

(*Continued on page 1246*)

DISEASE INCIDENCE IN CONNECTICUT
WEEK ENDING DECEMBER 10

	Week ending Nov. 19	Week ending Nov. 26	Week ending Dec. 3	Week ending Dec. 10	Average cases reported for week corresponding to Dec. 10 for past seven years.	Week ending Nov. 20	Week ending Nov. 27	Week ending Dec. 4	Week ending Dec. 11
Actinomycosis	-	-	-	-	-	-	-	-	-
Anthrax	-	-	-	-	-	-	-	-	-
Botulism	-	-	-	-	-	-	-	-	-
Cerebrospinal Men.	-	-	-	-	-	2	-	-	-
Chickenpox	157	124	94	67	94	102	111	143	119
Conjunctivitis	-	-	-	-	-	-	-	-	-
Diphtheria	46	28	43	37	77	34	25	32	37
Dysentery, Amoebic	-	-	-	-	-	-	-	-	-
Dysentery, Bacillary	-	-	-	-	-	-	-	-	-
Encephalitis, Epid.	-	1	-	-	-	1	-	4	-
Favus	-	-	-	-	-	-	-	-	-
Food Poisoning	1	-	-	-	-	-	-	-	-
German Measles	3	1	2	-	6	3	1	3	2
Hookworm Infection	-	-	-	-	-	-	-	-	-
Influenza	10	8	5	9	8	2	2	13	5
Leprosy	-	-	-	-	-	-	-	-	-
Malaria	-	-	-	-	-	-	-	-	-
Measles	30	36	29	47	114	10	32	69	39
Mumps	35	39	49	25	29	6	4	9	12
Paratyphoid fever	-	-	-	-	-	-	-	-	-
Pneumonia (Broncho)	21	15	19	25	22*	20	20	22	20
Pneumonia (Lobar)	27	31	30	33	31	32	25	42	32
Poliomyelitis	6	1	1	2	-	1	-	-	-
Scarlet Fever	69	36	68	70	102	54	44	58	52
Septic Sore Throat	4	3	1	2	8	3	1	3	3
Smallpox	-	-	-	-	-	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	-
Trachoma	-	-	-	-	-	-	-	-	-
Trichinosis	-	3	-	-	-	-	-	-	1
Tuberculosis (pul.)	28	20	21	25	29	22	37	30	15
Tuberculosis (o.f.)	6	4	4	2	1	-	-	5	1
Typhoid Fever	5	3	2	3	6	2	1	-	2
Typhus Fever	-	-	-	-	-	-	-	-	-
Whooping Cough	109	71	94	123	53	35	52	33	30
Gonorrhoea	43	27	60	34	15	16	15	42	9
Syphilis	34	30	72	29	17	8	9	33	14

*Average for two years. Made reportable January 1, 1925. Remarks: No cases of cholera, Asiatic, glanders, plague, rabies in humans and yellow fever during the past seven years.

In the final analysis, however, all will depend on the efficiency of the enforcement agents. Even in New York the principal offenders are the householders rather than the factories. So long as smokeless fuel is expensive it will be almost impossible to prevent people from using the more objectionable varieties. This makes it all the more important to carry out some such plan as Commissioner Harris proposes. The Department of Health cannot with its present organization take up and supervise this work properly. Yet it is of importance to the health as well as to the comfort of the city. Doctors are agreed that the smoke pall which hangs over the city on most Winter days is injurious in more ways than one. Not only does it restrict the amount of sunlight, but it also irritates throat and eyes and is thus a contributory factor to the spread of respiratory diseases. —*New York Times.*

RESUME OF REPORT OF THE NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS

New York City—December 15. The World War has indirectly resulted in a considerable increase in blindness in the United States and other countries wholly aside from the soldiers who lost their sight as the result of injuries in battle—this was revealed at the Thirteenth Annual Meeting of the National Committee for the Prevention of Blindness here tonight (December 15.) Dr. Park Lewis, of Buffalo, one of the founders and Vice-President of the Committee, in an address on "The Prevention of Blindness, a World-Wide Problem," and Lewis H. Carris, Managing Director of the organization, in his annual report, both touched on the manner in which the War has served to increase our blind population.

"After the Napoleonic wars," Dr. Lewis said, "when armies were disbanded and soldiers scattered from one end of Europe to the other, many of them carried infectious diseases into places where they were never known before. In that way there was scattered trachoma, one of the most devastating diseases of the eyes. At the close of the recent World War the same thing happened with even more widespread results. The Arab, the Chinese and other orientals had come into France with trachomatous eyes and the soldiers of the Allies had for months been in Syria and Palestine where hygiene had been largely unknown. After the armistice prisoners released from unsanitary surroundings carried infectious diseases into practically every nation of the world."

Dr. Lewis announced that through the splendid work of Dr. Hideyo Noguchi, Japanese working under the direction of the Rockefeller Institute, great progress has been made toward localizing the causative element on which trachoma is dependent.

"After years of research," Dr. Lewis said, "Noguchi has succeeded in isolating an organism by which he produces trachoma in the eyes of the monkey. This is of signal importance, although we may have far to go before the curative sera are developed. But this is another thread running through the warp of the structure that is binding the nations closer together.

"Widespread and disastrous as is trachoma as a world problem, it is but one of many. The venereal diseases, one of the chief menaces to sight, require international coöperation of those affected through transit across the borders of adjoining States. An understanding is necessary for the continued treatment of travellers passing from one country to another."

Dr. Lewis declared that trachoma is prevalent in many of our Indian reservations and among the white population in certain sections of the country and that Congress should take cognizance of this serious situation in its appropriations to the Public Health Service.

Mr. Carris reported that great progress had been made in the prevention of ophthalmia neonatorum, commonly known as babies' sore eyes, which for centuries has been the most prolific source of blindness. Statistics from schools for the blind throughout the country, Mr. Carris said, indicate that in the last 20 years the percentage of blind children whose sight has been destroyed by ophthalmia neonatorum has been reduced from 26.6 to 12.9. He reported, however, a slight rise in the percentage during 1926 and said: "This is probably due to the fact that the schools for the blind are now receiving the crop of children who were neglected during or immediately after the World War."

"Nothing less than the complete eradication of blindness from babies' sore eyes," Mr. Carris said, "will terminate the Committee's work in this field. In spite of all that has been done to educate the American public, the medical profession, midwives and nurses, there is still a considerable number of babies under one year of age in the United States who have been blinded for life through the neglect of a one minute precautionary measure at birth."

There are still 19 States and 2 territories of the United States, Mr. Carris said, which have inadaquate or no legislation or regulations for the use of a prophylactic in the eyes of the new born. Sixteen States, he said, have as yet made no provision for the distribution of a prophylactic to those who officiate at the birth of a child.

Outlining the future work of the Committee for the Prevention of Blindness in addition to its campaign for the eradication of ophthalmia neonatorum, Mr. Carris said the organization has under way a two-fold project for conserving the sight of school children, a project to promote on a nation-wide scale examination of the eyes of pre-school children for which a new technique has been demonstrated in 35 cities within the last year, a project to promote research into the causes of and methods for eradicating trachoma, and a number of activities in coöperation with national industrial and public health organizations looking toward the reduction of the eye hazards of industrial occupations and the hazards to sight resulting from the social diseases.

The following were elected members of the Board of Directors of the Committee: Dr. Ellice M. Alger, New York City; Miss Mary Beard, New York City; Mr. Carl A. De Gersdorff, New York City; Mr. Homer Folks, New York City; Mr. William Fellowes Morgan, New York City; Mr. James P. Munroe, Boston, Mass.; Dr. William F. Snow, New York City; Mr. Russell Tyson, Chicago, Ill.; Mr. John F. Wilkie, New York City; and Dr. William H. Wilmer, Baltimore, Maryland.

NATIONAL BOARD EXAMINATION IN BOSTON

Thirty-four candidates were examined by the Subsidiary Board of Boston in Part III, October 25, 26, 27 and 28. Thirty-three of the candidates were successful in securing passing grades, and will therefore receive the certificate of the National Board.

The names of the successful candidates and their medical schools are as follows:

Dr. Aristocles G. Augustine, Harvard University Medical School.

Dr. James M. Baty, Harvard University Medical School.

Dr. William P. Beetham, Harvard University Medical School.

Dr. Jacob Brenner, Tufts College Medical School.

Dr. Attilio Canzanelli, Tufts College Medical School.

Dr. Wylie L. Collins, Harvard University Medical School.

Dr. Charles L. Connor, Baylor University College of Medicine.

Dr. Albert H. Covner, Tufts College Medical School.

Dr. Lawrence H. Doolittle, Boston University School of Medicine.

Dr. Louis B. Dunn, Harvard University Medical School.

Dr. Olive Nisley Ehrenclou, Boston University School of Medicine and University of California Medical School.

Dr. Laurence B. Ellis, Harvard University Medical School.

Dr. Estelle J. Foote, University of Vermont College of Medicine.

Dr. Wendell D. George, Harvard University Medical School.

Dr. John B. Horner, University of Vermont College of Medicine.

Dr. William S. Justice, University of North Carolina School of Medicine and Harvard University Medical School.

Dr. Everett D. Kiefer, Harvard University Medical School.

Dr. J. Whitfield Larrabee, Harvard University Medical School.

Dr. Philip G. McLellan, Harvard University Medical School.

Dr. Donald McNeil, Harvard University Medical School.

Dr. Robert R. Linton, Harvard University Medical
Dr. Clifton T. Perkins, Boston University School of Medicine.

Dr. Francis J. Petrone, Harvard University Medical School.

Dr. Allan G. Rewbridge, Harvard University Medical School.

Dr. Sigurd C. Sandzén, University of Missouri School of Medicine and University of Kansas School of Medicine.

Dr. George Murdoch Saunders, Harvard University Medical School.

Dr. Monroe J. Schlesinger, Harvard University Medical School.

Dr. Leo Schwartz, Jr., Vanderbilt University School of Medicine.

Dr. Amos H. Stevens, Harvard University Medical School.

Dr. Wilmot C. Townsend, Harvard University Medical School.

Dr. Dudley P. Walker, Harvard University Medical School.

Dr. P. Francis Weiss, Harvard University Medical School.

Dr. Eske H. Windsberg, Cornell University Medical College.

—*National Board Bulletin.*

OBITUARIES

RESOLUTIONS ADOPTED BY THE MASSACHUSETTS PSYCHIATRIC SOCIETY DECEMBER 9, 1927

JOHN BERNARD MACDONALD, M.D.

Dr. John Bernard MacDonald died at Arlington, Massachusetts, September 6, 1927, rather suddenly, but not wholly unexpectedly, as he had suffered from arterial disease for many months.

Dr. MacDonald was born in Nova Scotia in 1873. He received his education in the schools there, receiving his A.B. degree from St. Francis Xavier College. He graduated from the Medical Department of Bowdoin College in 1904. At the time of graduation, he received an appointment as Assistant Surgeon with the Canadian Pacific Railroad which position he held until the following February, when he was appointed Assistant Physician at the Augusta State Hospital, Augusta, Maine. He remained in Augusta about two years, leaving there to go to the Concord State Hospital, Concord, New Hampshire, to take charge of their Reception Building. He left Concord State Hospital after a stay of about three years and did private practice in the city of Concord until he joined the staff of the Grafton State Hospital, North Grafton, Massachusetts, in June 1912. He left Grafton in November, 1912, to become Assistant Superintendent of the Danvers State Hospital which position he held until he was appointed Superintendent of that hospital in 1916. He continued as Superintendent of the Danvers State Hospital to within a short time of his death.

Dr. MacDonald was a member of his County Medical Society, the American Medical Association, the American Psychiatric Society, the New England Society of Psychiatry and the Massachusetts Psychiatric Society.

He was a frequent contributor to the literature of these Societies and was a thorough student of good literature.

His was a rather rare and unusual spirit. He was a man of high ideals. He conceived his life to have for its purpose Service. He took much pleasure in performing that service. He thought little of his own comfort, but was always concerned about the comfort and welfare of his patients. He was a soulful man and possessed the ability to express himself in good poetry and unusual prose.

He was devoted to his wife and family. His kindly and friendly qualities and his loyalty brought him a deserving host of friends who loved him greatly.

He is mourned by the patients of the Danvers State Hospital and by their relatives and friends and his passing is regarded by his professional colleagues as a distinct loss to the service of the State of Massachusetts.

The Massachusetts Psychiatric Society sadly realizes the loss of one of its distinguished members and extends its sympathy to the bereaved family and relatives.

GEORGE T. TUTTLE, M.D.

In the death of Dr. George T. Tuttle, the Massachusetts Psychiatric Society has lost one of its charter members. When the Society was formed, he had already retired from the Superintendency of McLean Hospital, and was taking a well-earned rest from the more than forty years of service which he had given to that institution, years which included the difficult and trying ones of the World War. He had not, however, wholly severed his connection with the Hospital, for on his retirement as Superintendent he had been elected a member of the Board of Trustees of the Massachusetts General Hospital, and was made Chairman of the Committee on McLean Hospital.

Ill health led him to resign this position and prevented his taking any more active part in the formation and conduct of this Society than was involved in attending its meetings. He was in hearty sympathy with its purposes, and attended its meetings when he could. To many of the younger members of the Society, he was hardly known. But those who are older will remember, with a sense of loss, his courteous ways, his sound and conservative judgment, his integrity and sincerity.

The Society here places on record its testimony to the high ideals of professional and personal conduct always maintained by Dr. Tuttle, and extends its sympathy to Mrs. Tuttle in her loss.

CORRESPONDENCE

WILL THE NEW SPIRIT PREVAIL?*

Under this caption there appeared on the 29th of November an unsigned article in the *Jewish Daily Forward*, a newspaper of wide circulation and international repute. It deals with election issues now confronting the New York Medical Society.

As the rooster crows nearly everywhere alike, I thought the article would be of interest to the readers of our own medical Journal. So here it is translated as best I could.

Something of a revolution is at present taking place in the medical profession of the City of New York. Quietly the struggle has been going on for a long time, but lately it has come more or less to the open, and we are therefore able to glimpse upon certain issues confronting our doctors for the struggle is of interest not only to the doctors but to the public as well, because anything affecting our medical profession must sooner or later reflect on the patients.

Now the question is, who is fighting who; who are the combatants composing the different camps; who are the reigning powers and who are the insurgents?

The fight is taking place in the New York County Medical Society, an organization to which belong 3500 Practising Physicians. As is the case with every other organization, so it is with this one: There is a group of men at the head of it who, according to the insurgents, have gradually formed a clique and usurped the power to themselves and see to it that no "outsider" gets to the lead. Anything smacking of a new policy is not tolerated. Of course doctors, being a polite class of people, do not use such harsh words as "clique", they apply the term "conservatives" to the present leaders of their society. They claim that those leaders have painfully neglected their duty to look after the welfare of the members of the society. In the last few years the society has allowed things to take place that have greatly damaged the interests of the doctors, so much so, that it is getting next to impossible for the ordinary practitioner to make a living.

They accuse the "conservatives" of having allowed many new obstacles to develop in the way of welfare of the general practitioner, let alone the failure to correct many old ones that have always hampered the natural progress of the profession. And when doctors are handicapped, they say it ultimately reflects on the well-being of the public as well.

Foremost of the issues involved comes the question of the "closed" hospital. The insurgents want an "open" hospital. To the lay-men, particularly to the workingman, these words may bring to mind the question of closed or open shop. The difference, however, consists in the fact that where the organized worker wants a closed shop, that is, one where only members of his union may be permitted to work, the doctors on the other hand want the hospitals to be open. Now, a "closed" hospital is one where only members of his union may treat the patients that come in there. This, from the standpoint of the revolutionary forces, brings towards the following evil: When a doctor tends to a patient at his office or at the patient's house, and then finds it necessary to send him to a hospital, his services to that patient are there and then discontinued, due to the hospital being "closed." The doctor in question has nothing more to do with his patient. In some hospitals he isn't even permitted to see that patient except during regular visiting hours. Such conditions are disastrous to both doctor and patient. The latter is suddenly taken away from the doctor he is so much used to. Frequently it is his family physician whom he has known for a long time and in whom he places most confidence. On the other hand the doctor may know things about that patient that may help towards his recovery. Even if it is not the family doctor it is still the one in whom the patient chose to place his confidence, and it would add to his peace of mind to have the doctor of his choice treat him in his new surroundings. That is as far as it concerns the patient; as to the doctor—the thing is even of more importance.

The hospital is the ideal place to study and cater to the needs of a patient. There are the skilled nurses, the latest improvements and inventions, the best instruments and most expensive apparatus. No one physician, no matter how well equipped his office, may have all these collectively. Besides, in the hospital he may at any time call upon the aid and skill of his colleagues whom he meets there daily and from whom he may constantly learn to the good advantage of his patients.

It is true that upon his graduation from the medical school, every young physician has to intern in a hospital for a certain length of time, where he learns a good deal. But after the completion of his internship he seldom, if ever, has any further connections with that institution, as he automatically becomes "an outsider", and through no fault of his own. On the other hand, there are the privileged few that are continually on the hospital staffs and have the steady opportunity to better themselves in more than one way. And who are those privileged few that are given these splendid opportunities while the others may only helplessly look on? The insurgents assert that those are the ones with a "pull" in the medical society the ones that know the "wiring system." And a good deal of the wire pulling is done by the "conservatives" of the very organization which is supposed to look after the welfare of all. And how does that affect the public at large? The answer is plain. The public would have much better doctors if all of them were given equal opportunities to have access to the hospitals, were it only the privilege to attend to their own patients.

It is true that the question of open or closed hospital is not entirely up to the leaders of the society, yet it was up to them to use their influence both on the hospital trustees as well as on the public. But that is just the very thing the conservatives never bestir themselves about.

Next on the insurgents' list of complaints is the Workmen's Compensation Act, about which the present leaders of the society have done nothing to benefit the profession at large. When an employee is injured, he is, according to the above act, entitled to medical aid for a certain length of time. The family physician is here entirely eliminated. The injured has no choice in calling upon the services of his own physician, but must go to the one designated by the particular insurance company. The family physician loses the opportunity to add something to his income and the injured person frequently has the suspicion that he is hurried back to work before complete recovery by an over zealous company-doctor. Now this could be entirely done away with if the injured person could have a doctor of his choice to treat him. Of course the Workmen's Compensation Act has already been passed and raised its havoc with the income of the average doctor, but where, ask the insurgents, were those who were supposed to watch for the interest of the members; where were they when the legislature sat in framing the laws? Their inactivity was a flagrant violation of trust.

Now the last but not the least of the campaign issues is the question of the Life Extension Institute, whose activities it should have been the business of

*The above letter containing the translation of an Editorial in the *Jewish Daily Forward* is of interest in that it reflects the opinion of a not inconsiderable portion of the membership of the New York County Medical Society. The fact that the JOURNAL publishes this letter does not indicate its sympathy with all of the views expressed by the editorial.

the old leaders to curb, in so far as it affects the income of the average doctor. It was the original intent of the Institute to promote hygiene and knowledge for better health. Particularly it was impressed upon the public that periodic health examinations were a decided factor in the well-being of an individual. People high in public life, as well as the profession at large, helped the propaganda of the Institute. No sooner, however, did the public grasp the idea and began to visit their family physicians for health examinations when they were swamped with literature from the selfsame Institute with promises for most extensive examinations for a nominal fee or gratis. The advertising was extensive and the promises colorful. While at the same time the average member of the society was duty-bound not to use anything that might be construed as advertising.

Where were the leaders, aver the "moderners", when the Institute was in the making? Should not the interests of the rank and file have been looked after?

Those seem to be the three main issues confronting approaching elections of officers in the New York Medical Society. There is a fight to a finish between the "powers that be" and the new forces that claim to have a right to better treatment than was accorded them until now.

The outcome of the "revolution" remains to be seen.

R. GURALNICK.

THE DISPENSABILITY OF THE SYMPATHETIC DIVISION OF THE AUTONOMIC NERVOUS SYSTEM

Editor, Boston Medical and Surgical Journal:

During a recent cleaning up of my desk after my vacation I hastily read Dr. Cannon's interesting communication regarding the so called "dispensability" of the vegetative nervous system, since if I read aright, he cut *all* the nervous connections of the "organs" and these organs still functioned.

Am I correct in assuming that Dr. Cannon overlooks the fact that both receptor and effector nervous structures are contained *within* all the organs and have connectors *within* the organs. They cannot be cut out. Further no "organ" can be deprived entirely of its vegetative nervous system stimuli, so long as an arterial branch is left in connection with the body. Hence are not his conclusions as stated quite faulty?

Very sincerely,

SMITH ELY JELLIFFE, M.D.

THE ANSWER

December 1, 1927.

Editor, Boston Medical and Surgical Journal:

The letter of Dr. Smith Ely Jelliffe regarding the article on the "Dispensability of the Sympathetic Division of the Autonomic Nervous System" has been submitted to me for comment.

Dr. Jelliffe is mistaken in stating that the communication to the JOURNAL was on the dispensability of "the vegetative nervous system." The vegetative nervous system is that part of the nervous organization of the body which is concerned with the control of smooth muscles and glands. It comprises the cranial, the thoracico-lumbar or "sympathetic", and the sacral divisions of the autonomic system, and also the enteric nerve net of the alimentary tract. The only part of this system with which the article in question was concerned, as shown both by the title and the text, was the sympathetic division of the autonomic system. As stated in the article, there was complete removal of all the ganglia of that system "from the superior cervical ganglion to the united ganglia of the two lateral chains just below the rim of the pelvis." Since these chains of ganglia contain the cell bodies of all sympathetic neurones distributed to the iris, the digestive glands, the heart, the alimentary tract, the uro-genital system, the blood vessels of all parts of the body, and the hairs and sweat glands, the sympathetic fibers to these structures must have degenerated. In the absence of the sympathetic ganglia, as Langley has shown, the pre-ganglionic fibers, composed of neurones with cell bodies in the central nervous system, cannot make effective connection with smooth muscles and glands. No restoration of sympathetic nervous control, therefore, is possible. Consequently smooth muscles and glands throughout the body (arteries included) were deprived of their sympathetic nerve supply and stimuli.

There are possibilities of local reflexes in the wall of the alimentary tract by action of the enteric nerve net. I should be obliged to Dr. Jelliffe if he would cite evidence of receptor and effector nervous structures *within* any other organs mentioned above as being deprived of their sympathetic connections.

Yours very truly,

W. B. CANNON.

NEWS ITEMS

A NEW HOSPITAL IN SOMERVILLE—A new general hospital was organized Monday, December 19th, in Somerville, to be known as the Central Hospital. It will meet the standard required by the American College of Surgeons. This hospital is the outgrowth of the Central Street Hospital, that was established twelve years ago.

Recently, three new rooms have been added to the hospital operating room, maternity ward, and X-Ray room. The hospital has twenty-eight beds and eighteen cribs.

The staff includes the following named doctors: Edward J. Dailey, Frank J. Bresnihan, Charles F. McCaffrey, Leo T. Myles, Barnett Titelbaum, Frank J. Fitzpatrick, Lawrence J. Dervin, Joseph J. McSweeney, William Dewire, Henry Caberciarias, Henry O. Lacey, Morris Dressler, Robert E. Driscoll, A. J. Villone and A. J. Bianchi.

The consulting staff comprises Doctors Thomas J. Scanlan, Stephen Rushmore, Joseph J. Stanton, and William E. Browne.

SMOKE ABATEMENT IN NEW YORK CITY—Dr. Harris, Commissioner of Health for New York, after conference of one hundred and fifty representatives of medical, civic, and various trade associations with the smoke advisory committee, has announced that he will appoint one independent committee to assist in the abatement of the smoke nuisance.

DINNER IN HONOR OF DR. FRANKEL—A dinner in honor of Lee K. Frankel, Ph.D., Second Vice-President of the Metropolitan Life Insurance Company, was held at the Hotel Biltmore, New York, on December 9, 1927. More than 600 persons, including physicians, sanitarians, social workers, and prominent laymen, gathered to pay tribute to Dr. Frankel for his many contributions during the last two decades to public health and social progress. Addresses were made by Mr. Felix Warburg, Mr. Haley Fiske, and Professor C-E. A. Winslow of Yale University. The last named not only eulogized Dr. Frankel as a former president of the American Public Health Association and Chairman of the National Health Council, but spoke of his achievement in inaugurating the famous health demonstration at Framingham, Massachusetts. Professor Winslow contrasted the public service of Dr. Frankel with that of the present mayor of Chicago, who recently dismissed the efficient

health commissioner of that city and replaced him with a surgeon untrained in public health.

Among those in attendance from Boston and vicinity were Dr. S. W. Stratton of the Massachusetts Institute of Technology, Prof. C. E. Turner, Dr. Charles F. Wilinsky, Dr. M. J. Rosenau of Harvard Medical School, Miss Sophie C. Nelson, and Dr. and Mrs. Charles V. Chapin of Providence, R. I. Mr. Homer Folks of New York presided at the dinner and at its conclusion presented Dr. Frankel with a clock and desk set as tokens of esteem from his friends.

LECTURES ON PUBLIC HEALTH—Dr. James A. Tobey of New York lectured on public health law at the Harvard School of Public Health on December 7th and 9th.

TREATMENT OF PARESIS—Reports from the Binghamton State Hospital set forth favorable results in patients, suffering with paresis, treated with the malaria plasmodium. The improvement has been to such a marked degree that many patients have been permitted to leave the hospital and return to their homes. No claim for permanent cures have thus far been made but the benefits secured seem to be more striking than have been observed under other forms of treatment.

RATS CURED OF CANCER—Dr. Thomas Lamsden in charge of the British Cancer Campaign claims to have observed cures of cancer in rats, brought about by the injection of formalin into the growth. Of the rats treated he claims cures in 77 per cent.

Dr. Lamsden expresses the hope that this method will be used in treating cases of human cancer but suggests caution in the employment of this agent.

REDUCTION IN THE INCIDENCE OF COMMUNICABLE DISEASES—The Public Health Service reports that with the exceptions of poliomyelitis all communicable diseases have been less prevalent in the United States during 1927 than during 1926.

REMOVAL—Dr. D. J. Fennelly has announced the removal of his office to 270 Commonwealth Avenue, Boston, Mass.

NOTICES

POSTPONEMENT OF THE INDEX

The probable change of the title of the BOSTON MEDICAL AND SURGICAL JOURNAL after the nineteenth of next February presents a complication with respect to the apportionment of the number of weekly issues to the present volume.

If this change, which will be recommended by the Committee of Nine which has charge of the JOURNAL, is to be adopted by the Massachusetts Medical Society, a volume should be started under the new name.

Because of this expected change the present volume will be continued until the one hundred years of consecutive publication shall have been completed and, therefore, the publication of the index will be deferred and the issues of January and part of February 1928 will be included in Volume 197 and the index of volume 197 will be published in February.

The new name of the JOURNAL will probably be the *New England Journal of Medicine* which will be more appropriate under present conditions because the Massachusetts Medical Society is now affiliated with the New Hampshire and Vermont Medical Societies in the publication of this JOURNAL.

The Maine Medical Association has shown a desire to also unite with the three States mentioned above when the designation "Boston" shall have been dropped.

INTERNATIONAL MEDICAL CONTINUATION COURSES IN BERLIN

International medical continuation courses in Berlin are arranged with the help of the medical faculty of the university by the Lecturers' Association for Medical Continuation Courses and the Kaiserin Friedrich-Haus. Part of the courses take place permanently, part only in March and April, 1928.

I—PERMANENT COURSES

(a) Of 2-4 weekly duration.

(b) Vacancies for temporary auditors of lectures in clinics, hospitals and laboratories of 2-3 monthly duration, possibly longer, for those gentlemen who wish to gain practical experience from systematic instruction.

II—COURSES IN MARCH AND APRIL

(a) Synoptical Courses—Fortnightly. "New aspects and methods of clinical pathology and therapeutics." The course is to give the participants a comprehensive survey of the most important improvements in internal and infantile therapeutics, surgery, gynaecology, urology, dermatology and throat, nose and ear diseases. Adjoined to this course technical and methodical single courses covering the same ground, combined with introductions to patients, have been arranged. Inter alia the following gentlemen are coöperating in this course: Brugsch, Buschke, Czerny, Benda, Goldscheider, F. Klemperer, Kraus, Munk, Schilling, Schlayer, Strauss, etc.

(b) Synoptical Course covering the sphere of metabolism—lasting ten days. Survey of the most important improvements in the range of metabolical diseases, especially diabetes, adiposity, endocrinological metabolical disorders, metabolism of uric-acid, adiposis and albumen. Coöperators i. a.: Messrs. von Bergmann, Boas, Lubarsch, Richter, Umber, etc.

(c) Synoptical Course on obstetrics and gynaecology, lasting ten days. In the forenoons operations, in the mornings and afternoons lectures, representations (gymnastics), etc., eight seminary evenings. Collaborators i. a.: Messrs. Abel, Bracht, Hammerschlag, Hirsch, Schäfer, Stickel, Strassmann, etc.

(d) Synoptical Course dealing with the improvements in Roentgen diagnosis and Ray-Therapeutics (17-24, April, 1928), 30 lectures, three debating evenings. Practical training, inspection of relative specialized institutions. Coöperators i. a.: Messrs. Max Gohn, Dieck, Lazarus, Levy-Dorn, Pick, Ringleb, etc.

(e) Single Courses covering the whole medical ground combined with practical work.

The courses are held in German, but numerous professors are able to lecture in the English, French and Spanish languages.

The office assists in procuring suitable lodgings, gives information re costs of stay, and arranges visits to clinics at operations, etc.

The office quarters are in the Kaiserin Friedrich-Haus, Berlin NW 6, Luisenplatz 2-4.

Besides the permanent courses of 2-4 respectively 8 weeks duration the following courses are proposed for next spring:

(a) "New aspects and methods of clinical pathology and therapeutics" (fortnightly).
(b) Metabolical diseases (ten daily).
(c) Obstetrics and gynaecology (ten daily).
(d) Improvements in Roentgen diagnosis and ray therapeutics covering the whole medical ground (April 17-24, 1928).
(e) Courses of certain lecturers covering the whole range of medicine.

Foreign participants will after due registration receive at desire a relative certificate. At the same time the office will apply at the competent quarters for a free passport visa.

THE INTERSTATE POST-GRADUATE ASSEMBLY OF NORTH AMERICA

A bulletin of information pertaining to the spring assemblies of this organization covering the period of May 16, 1928, to June 10, 1928, and the foreign assemblies from June 16, 1928, to August 6, 1928, has been issued.

The itinerary of the spring tour covers visits to clinics in St. Louis, Nashville, New Orleans, Dallas, Los Angeles, San Francisco, Seattle, Portland, Ore., Denver and Omaha. The foreign assemblies are in response to invitations from the leading medical universities and institutions of the countries visited.

For detailed information apply to Dr. W. B. Peck, Freeport, Illinois.

UNITED STATES PUBLIC HEALTH SERVICE

CHRONOLOGICAL LIST OF CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

NOVEMBER 30, 1927

Surgeon L. L. Williams, Jr. Directed to proceed from Richmond, Va., to Washington, D. C., and return, for conference with Bureau officials in connection with malaria investigations. November 23, 1927.

Senior Sanitary Engineer J. A. Leprince. Directed to proceed to New York, N. Y., and return to station, at some time during month of December when duties will permit for the purpose of consulting with local health authorities regarding sanitary questions arising in that locality. November 23, 1927.

Passed Assistant Surgeon (R) C. Y. Bailey. Directed to proceed from Savannah, Ga., to Washington, D. C., and return, for the purpose of accompanying patient to St. Elizabeth's Hospital. November 23, 1927.

Surgeon Grover A. Kempf. Directed to proceed from Washington, D. C., to Hagerstown, Md., and return, in connection with field invesigations in child hygiene carried on at that station. November 26, 1927.

Assistant Surgeon General W. F. Draper. Directed to proceed from Washington, D. C., to Richmond, Va., and return, on November 29, for conference with State Health Department regarding measures for the sanitary control of shellfish in interstate shipment. November 26, 1927.

Surgeon W. L. Treadway. Directed to proceed from Dublin, I. F. S., to Warsaw, Poland, and return, for the purpose of assisting Senior Surgeon Taliaferro Clark in making a study of the mental examination of aliens as conducted at Warsaw. November 26, 1927.

Surgeon J. P. Leake. Directed to proceed from Washington, D. C., to Philadelphia, Pa., and return, on November 29, 1927, and such other places as may be necessary in connection with studies of industrial hygiene. November 29, 1927.

Surgeon L. L. Williams, Jr. Directed to proceed from Richmond, Va., to Charlottesville, Va., and return, to consult hospital authorities and physicians, relative to public health matters. November 29, 1927.

Assistant Surgeon T. C. Kienzle. Relieved from duty at Flood Relief Headquarters, New Orleans, La., and assigned to duty at the New Orleans Quarantine Station. November 29, 1927.

Surgeon A. D. Foster. Directed to proceed from Norfolk, Va., to Washington, D. C., and return, on December 9, 1927, for conference with Bureau, regarding methods of medical examinations. November 29, 1927.

Surgeon W. M. Bryan. Directed to proceed from Savannah, Ga., to Washington, D. C., and return, on December 9, 1927, for conference with the Bureau, regarding methods of medical examinations. November 29, 1927.

Surgeon J. W. Trask. Directed to proceed from Baltimore, Md., to Washington, D. C., and return, for conference at Bureau on December 9, 1927, regarding methods of medical examinations. November 29, 1927.

BOARDS CONVENED

The following boards are convened for the purpose of inspecting and condemning property at the stations mentioned:

Rolla, Missouri. Detail for the Board: Surgeon P. D. Mossman, Assistant Surgeon A. S. Rumreich.

Russellville, Ark. Detail for the Board: Surgeon P. D. Mossman, A. A. Surgeon E. C. Mason.

DECEMBER 7, 1927

Surgeon J. D. Long. Directed to proceed from Balboa Heights, Canal Zone, to Habana, Cuba, and return, to attend Sixth International Conference of American States. November 29, 1927.

A. A. Surgeon C. H. Turpin. Directed to proceed from Seattle, Washington, to San Francisco, Calif., and return, to accompany patient to that place. November 29, 1927.

Assistant Surgeon (R) J. H. Ready. Directed to proceed from San Francisco, Calif., to Santa Barbara, and Riverside, Calif., and thence to Carville, La., to accompany patient to Marine Hospital No. 66. November 29, 1927.

A. A. Surgeon I. E. Huffman. Directed to proceed from Tucson, Ariz., to Nogales, Ariz., and return, for the purpose of examining an alien. Nov. 29, 1927.

Surgeon Joseph Goldberger. Directed to proceed from Washington, D. C., to Little Rock, Ark., to confer with State and local health officials concerning the prevention of the interstate spread of epidemic diseases in the flood area, and then to such points in Arkansas and Tennessee as may be necessary, for duty in connection with the prevention of the interstate spread of smallpox and other epidemic diseases in the flood area. November 30, 1927, and December 3, 1927.

Associate Sanitary Engineer H. N. Old. Directed to proceed from Baltimore, Md., to Washington, D. C., on December 12, 1927, for the purpose of an examination to determine fitness for promotion to next higher grade. November 30, 1927.

Associate Milk Specialist W. H. Haskell. Directed to proceed from Austin, Tex., to Little Rock, Ark., and return, on or about December 4, 1927, in connection with milk investigations being carried on by the Public Health Service. November 30, 1927.

Surgeon R. W. Hart. Directed to proceed from San Francisco, Calif., to Carville, La., via Santa Barbara and Riverside, Calif., to accompany patients to Marine Hospital No. 66. December 1, 1927.

Chemist E. J. Theriault. Directed to proceed from Cincinnati, Ohio, to Urbana, Ill., and return, for conference with the officials of the Illinois State Water Survey in connection with investigations of stream pollution. December 1, 1927.

Senior Surgeon S. B. Grubbs. Directed to proceed from Chicago, Ill., to Detroit, Mich., and assume temporary charge of U. S. Marine Hospital No. 7, until the return of Surgeon H. E. Trimble. December 3, 1927.

Surgeon L. L. Lumsden. Directed to proceed from Washington, D. C., to Little Rock, Ark., to confer with State and local health authorities concerning the prevention of the interstate spread of smallpox and other epidemic diseases in the flood area. December 3, 1927.

Associate Sanitary Engineer A. W. Fuchs. Relieved from duty at Biloxi, Miss., and assigned to duty at Jackson, Miss., in connection with milk investigations. Dec. 3, 1927.

Assistant Surgeon General Thomas Parran, Jr. disease control studies being conducted by the Public Directed to proceed from Washington, D. C., to Baltimore, Md., and return, in connection with venereal Health Service. Dec. 3, 1927.

Assistant Surgeon General F. A. Carmelia. Directed to proceed from Washington, D. C., to Marcus Hook, Pa., and return, for the purpose of effecting the transfer of a Quarantine Tug from Marcus Hook, Pa., to Baltimore. December 5, 1927.

P. A. Dental Surgeon (R) F. W. Harper. Relieved from duty at the Coastguard Headquarters, Seattle, Washington, and assigned to duty at U. S. Public Health Service Relief Station No. 329, Seattle, Washington. December 5, 1927.

Surgeon M. F. Haralson. Directed to proceed from Port Arthur, Tex., to New Orleans, La., and return, for the purpose of accompanying a beneficiary to Marine Hospital No. 14. December 5, 1927.

Assistant Surgeon General A. M. Stimson. Directed to proceed from Washington, D. C., to Nashville, Tenn., and return, to attend meeting of the American Association for the advancement of Science, December 26-31, 1927. December 6, 1927.

BOARDS CONVENED

Board convened at Washington, D. C., at 10 a. m. December 12, 1927, to examine Associate Sanitary Engineer H. N. Old, to determine his fitness for promotion to the grade of sanitary engineer. Detail for Board: Assistant Surgeon General Thomas Parran, Jr., Chairman; Surgeon L. R. Thompson, Member; Associate Sanitary Engineer A. P. Miller, Recorder.

Board convened at Montreal, Canada, for the purpose of re-examining an alien, to meet at call of Chairman. Detail for Board: Surgeon Louis Schwartz, Chairman; A. A. Surgeon A. G. Morphy, Member; A. A. Surgeon F. H. Mackay, Recorder.

Official:

H. S. CUMMING, *Surgeon General.*

REPORTS AND NOTICES OF MEETINGS

BOSTON ORTHOPEDIC CLUB

A regular meeting of the Boston Orthopedic Club was held in the Sprague Hall of the Boston Medical Library on Monday evening, December 12.

The first paper was by Dr. Philip D. Wilson on "Posterior Capsulaplasty in Certain Flexion Contractures of the Knee." He described the operation which he has devised for its relief. This consists in freeing all the tissues including the capsule of the knee joint done through two lateral incisions, one on either side, retracting the tissues forward so as to get good exposure of the posterior compartments of the knee. Following this the knee is put up in extension and subsequent attention depends on the case, usually requiring some exercises, etc. In his experience practically all of his cases had improved as to function of the joint. The joints could be fully extended and the subluxation had reduced. Three patients were shown on whom the operation had been done, all with very satisfactory results.

The paper was discussed by Drs. Painter, Osgood, and Ober.

The second paper was by Drs. Robert B. Osgood and Charles C. Lund on "Fractures of the Odontoid Process." Dr. Osgood reviewed the literature on the subject and the cases that have been previously reported, the anatomy, pathology, and treatment. He advocated extension and fixation and no manipulation. Dr. Lund then recited his own personal case of odontoid fracture and told his experiences in going to the hospital and his treatment. The type of leather head support that was used was shown and the post-operative treatment outlined.

The paper was discussed by Drs. Jepson, Wilson, and Ober.

After the meeting part of the exhibit of art by medical men was inspected.

FRANKLIN DISTRICT MEDICAL SOCIETY

The regular bi-monthly meeting of the Franklin District Medical Society was held at the Weldon Hotel, Greenfield, Mass., Tuesday, Nov. 8, 1927, Dr. A. H. Ellis presiding. The meeting was one of the most largely attended of any recent gathering which was a tribute, both to the speaker of the day and the recognized importance of the subject discussed.

In connection with the order of business, Dr Ellis reported having appointed a committee of members to devise ways and means for starting a Cancer Clinic in Franklin County, according to the vote passed at the last meeting. The members of the committee as named are Drs. Howe, Ellis, and Croft of Greenfield; Marble of Shelburne Falls and Pelletier of Turners Falls. Dr. Howe, the Chairman, reported that preliminary investigation had already started and it was proposed to visit one or more neighboring clinics in order to observe their plan and methods.

Dr. Robert L. DeNormandie of Boston was introduced as a physician well qualified by extensive hospital experience and private practice in his specialty to speak on such a subject of universal interest both to physicians and laymen, as Prenatal Care in General Practice. Dr. DeNormandie spoke for over an hour on this subject and practically all of his address could have been listened to by any mature man or woman with understanding and profit. Some of the most important of the points which he stressed were the following:—

Prenatal Care is that part of maternal care which has as its object the complete supervision of the pregnant woman in order to preserve the happiness, health and life of mother and child. Because of its importance in propagating the race, all pregnant women should be under medical supervision throughout the periods of pregnancy, for only by regular and careful prenatal observation can pregnancy and labor be made safer.

He advocated the examination of patients monthly during the first six months then every two weeks and finally every week. At such visits the general condition should be investigated as well as the blood pressure, urinalysis, pulse, temperature and weight taken and recorded, and he outlined the importance of certain anatomical measurements and emphasized their significance in giving advance information of probable difficult delivery.

Although a general plan of procedure applicable to all patients was desirable and essential, he brought out the importance of giving to each patient careful individual study and along with this thought he reminded his hearers that, though pregnancy is a physiological process, there is no other condition which can so quickly become pathological.

He urged that patients be instructed at their first visit to frankly report any obstinate constipation, shortness of breath, acute illness, especially colds, sore throat and repeated cough, persistent or recurring headache or nausea or vomiting, changes in vision or dizziness, abdominal pain, swelling of the face, hands and ankles, and most important of all bleeding in any amount. From an intelligent study of these signs and symptoms the observing physician and cooperating patient can do much to prevent the poisoning of the body which, if unrecognized or left untreated, results in the development of that serious complication known as eclampsia or convulsions.

His remarks on septic poisoning or puerperal fever and the way and methods by which these germs are introduced from without and the modern methods of its control were of great interest, especially to the

older practitioners, whose personal experience with this dread malady make it an ever present possibility. That this complication has more than a theoretical interest for physicians in this locality is shown by the record of 8 deaths in Franklin County in the past ten years.

He concluded by urging upon those physicians who practice obstetrics, to be alert and receptive to modern ideas upon which intelligent prenatal care is based, because it is only by early and repeated examinations of the prospective mother that the premature ending of pregnancies, the still-births, and the many diseases and deaths of the new born can be reduced. By the same methods, mothers can be spared much distress and disease, and many lives can be saved which would otherwise be lost.

Pregnancy under modern civilization, with its stresses and strains, its excesses in pleasure and work, demands intelligent guidance which, if practiced by the sympathetic physician, will put a new interest into an important function which has heretofore been looked upon as just an ordinary routine of practice.

There was a free discussion at the close of the formal paper, during which Dr. DeNormandie detailed a number of points which would otherwise have been less clearly understood. As was to be expected, many of those present wanted specific knowledge on the treatment of eclampsia; also a resumé of recent theories regarding the prevention of septicemia: and what were the special factors making Cesarean section a justifiable substitute for natural labor.

The meeting closed with a rising vote of thanks extended to the speaker and a majority of the members present remained for dinner.

B. P. Croft, *Reporter.*

TRUDEAU SOCIETY OF BOSTON

The next meeting of the Trudeau Society of Boston will be held on Tuesday evening, January 3, 1928, at 8:15 p. m., in Sprague Hall, Boston Medical Library, 8 The Fenway, Boston.

The speaker will be Dr. George T. O'Donnell; subject: "The Tuberculosis Program of Boston." Dr. Francis X. Mahoney, Dr. Sumner H. Remick, Dr. Edward O. Otis, Dr. Vincent Y. Bowditch, Dr. John B. Hawes, 2nd, and Dr. Cleaveland Floyd have been asked to lead in the discussion.

Physicians, medical students, and nurses are cordially invited to attend this meeting.

Randall Clifford, *Secretary.*

ESSEX NORTH DISTRICT MEDICAL SOCIETY

The 86th Semi-Annual meeting of this society will be held in Centre Church vestries, Main Street, corner of Vestry Street, opposite City Hall, Haverhill, Mass., (Tel. 548) Wednesday, January 4, 1928.

Dinner will be served at 12:30 sharp.

Following the dinner the business meeting will occur, after which these speakers will address us:

1. John M. Birnie, M.D., of Springfield, President of the Massachusetts Medical Society. Among other topics he will explain Physicians' Liability Insurance for Fellows of the Massachusetts Medical Society.

2. Chas. F. Painter, M.D., of Boston, Professor of the History of Medicine at Tufts College Medical School, upon Buergers Disease (obliterating endarteritis.)

3. Reginald Fitz, M.D., of Boston, Associate Professor of Medicine, Harvard University Medical School, upon "What would you do if you had a Peptic Ulcer?" with lantern slides. (30 minutes.)

Discussions are invited upon the above matters.

The annual assessment may be paid at this meeting. ($8.00.)

Adelbert M. Hubbell, M.D., *Pres.*
J. Forrest Burnham, M.D., *Sec.*
567 Haverhill St., Lawrence, Mass.

December 27, 1927.

THE BUDAPEST CONGRESS

September, 1928

"The Fifth International Medical Congress for Industrial Accidents and Occupational Diseases" is to be held in Budapest during September, 1928. The Executive Committee consists of the following: President, Dr. Tibor de Verebély, Professor at the University; Vice-President, Dr. William de Friedrich, Professor at the University; Secretary-General, Privatdozent Dr. George Gortvay, Section Chief.

The National Committee for the United States has been created and consists of the following: Dr. Volney S. Cheney, Chicago; Dr. R. W. Corwin, Pueblo; Dr. Eugene L. Fisk, New York; Dr. Otto P. Geier, Cincinnati; Dr. Leonard Greenburg, New Haven; Dr. George M. Kober, Washington, D. C.; Dr. W. J. McConnell, Philadelphia; Dr. Lloyd Noland, Birmingham; Dr. Francis D. Patterson, Philadelphia; Dr. George M. Price, New York; Dr. Frank L. Rector, Chicago; Dr. Wm. A. Sawyer, Rochester; Dr. Henry F. Smyth, Philadelphia; Dr. C.-E. A. Winslow, New Haven; and Dr. Emery R. Hayhurst, Columbus, *Chairman.*

Addresses already scheduled by various prominent Europeans include the following: Prof. J. Liniger, Frankfurt a.M.; Dr. F. Zollinger, Aarau; Prof. K. B. Lehmann, Würzburg; Sir Thomas Oliver, London; Prof. J. G. Sleeswijk, Delft; Prof. Jütten, Münster; Prof. Koelsch, München; Prof. Julius van der Hoeve, Leiden; Prof. Dr. Stephen Jellinek, Wien. Also lectures are scheduled to date by the following: Prof. Salvatore Diez, Roma; Dr. C. Poenaru Caplescu und Dr. Presbeanu, Bukarest; Prof. Theodor Sommerfeld, Berlin; Dr. Lorenz Böhler, Wien; Prof. Dr. Quensel, Leipzig; Prof. Dr. C. Marcus, Breslau; Prof. Dr. Molineus, Düsseldorf; and Sanitätsrat Dr. Alfred Peyser, Berdin-Charlottenburg.

Addresses and lectures are wanted from American physicians, dentists, and other specialists in the field. Such are requested to get in touch with the Chairman for the National Committee for the United States, Dr. Emery R. Hayhurst, Hamilton Hall, Ohio State University, Columbus, Ohio. General invitation is also extended to attend the Congress which will be arranged so as to coördinate with the "Deutscher Naturforscher Tag" to be held in Hamburg, and the "Orthopädenkongress" to be held at Prague during the month of September, 1928.

ANNUAL MEETING OF THE NATIONAL TUBERCULOSIS ASSOCIATION

This meeting will be held in Portland, Oregon, June 18, 19, 20, with June 21 set aside for a pleasure trip. June 22 and 23 will be assigned for supplementary meetings.

Railroads are arranging for side trips or more extended excursions and every effort will be made to cater to the comfort and enjoyment of those who will attend the meetings.

SOCIETY MEETINGS

January 3—Trudeau Society meeting. For detailed notice see page 1203, issue of December 22.

January 12—Staff clinical meeting of the Massachusetts General Hospital. For detailed notice see page 1200, issue of December 22.

January, February, March and April, 1928—Last Saturday at 11 A. M. Cheever Amphitheatre, Staff Clinical Meetings at Boston City Hospital.

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

January 4, 1928 (Wednesday)—Semi-annual meeting at the Centre Church vestries, Main Street, Haverhill, at 12:30 P. M.

May 2, 1928 (Wednesday)—Annual meeting at 12:30 P. M.

May 3, 1928 (Thursday)—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M. Candidates should apply to the Secretary, J. Forrest Burnham, M.D., 567 Haverhill Street, Lawrence, at least one week prior.

Essex South District Medical Society

January 4, 1928 (Wednesday)—Deer Cove Inn, Swampscott. Dinner at 7 P. M.

Dr. Frank Lahey, "Differential Points of Importance to the General Practitioner in Surgical Diagnosis."

Discussion by Drs. Walter Phippen of Salem and N. P. Breed of Lynn, 10 minutes each, and from the floor.

February 1 (Wednesday)—Council meeting, Boston.

February 8 (Wednesday)—Danvers State Hospital. Clinic at 4 P. M. Buffet supper at 6 P. M., followed by

Dr. Abraham Myerson, "Some Aspects of Mental Hygiene."

Discussion by Drs. W. F. Wood of Hathorne and G. M. Kline of Beverly, 10 minutes each, and from the floor.

March 7 (Wednesday)—Lynn Hospital. Clinic at 5 P. M. Dinner at 7 P. M.

Dr. Henry R. Viets, "The Acute Infections of the Nervous System," with lantern slides and moving pictures.

Discussion by Drs. W. V. McDermott of Salem and J. W. Trask of Lynn, 10 minutes each, and from the floor.

April 11 (Wednesday)—Essex Sanatorium, Middleton. Clinic at 5 P. M. Dinner at 7 P. M.

Dr. Raymond S. Titus, "Obstetrical Emergencies."

Discussion by Drs. J. J. Egan of Gloucester and A. T. Hawes of Lynn, 10 minutes each, and from the floor.

May 3 (Thursday)—Censors meet at Salem Hospital for the examination of candidates at 3:30 P. M. Candidates should apply to the Secretary, Dr. R. E. Stone, Beverly, at least one week prior.

May 8 (Tuesday)—Annual meeting. Place and speaker to be announced.

Suffolk District Medical Society

Combined meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library, 8 The Fenway, at 8:15 P. M., as follows:

January 25, 1928—General meeting in association with the Boston Medical Library.

Dr. George W. Crile, Lakeside Clinic, Cleveland, Ohio. Title to be announced later.

February 29—Surgical Section. Subject to be announced later.

March 28—Medical Section. "The Use and Misuse of Vaccines." Dr. Hans Zinsser, Dr. Francis M. Rackemann, Dr. Charles H. Lawrence.

April 25—Annual meeting. Election of officers. Paper of the evening to be announced later.

The medical profession is cordially invited to attend these meetings.

Notices of meetings **must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.**

BOOK REVIEWS

The Principles of Sanitation, A Practical Handbook for Public Health Workers. By C. H. KIBBEY, Director of Sanitation, Tennessee Coal, Iron and Railroad Company; Birmingham Southern Railroad Company; Fairfield Utilities Company. F. A. Davis Company Publishers, Philadelphia. 1927.

In this book of three hundred and fifty pages the author takes up specifically five subjects, viz:

Diseases spread through discharges from the Intestinal Tract; Diseases spread largely or entirely through secretions from the mouth and nose; Modern Methods of Rural Sanitation; an analysis of food in its relation to disease; The prevention of Occupational Diseases.

It is an unusual book. It is a clear, concise exposition of procedures which have really proved that they are worth their cost in preventing disease and otherwise promoting health. It is written by a man who has demonstrated to business concerns that certain measures intended for the promotion of health really pay as a business proposition and the book throughout reflects the writer's successful experience in the training of persons of average intelligence in the practical application of such measures.

Getting Well and Staying Well. By JOHN POTTS, M.D. St. Louis, Mo.: C. V. Mosby Company. Price, $2.00.

This book consists of 223 pages, 12 chapters, with an introduction by Dr. J. B. McKnight of the Texas State Tuberculosis Sanatorium. The titles of some of the chapters are distinctly intriguing. For instance, "Suspecting Tuberculosis" is of very real interest and value as it puts it up to the patient to have some interest in his own condition and be on the lookout for early signs and symptoms. It is a constant source of amazement to me that so many patients should allow themselves to get into such remarkably poor physical condition before they even suspect anything is wrong.

The third chapter, "Accepting the Diagnosis," and the fourth, "Learning Tuberculosis," are of great interest. Subsequent chapters, "Evidences of Improvement," "Conflicts with Family and Friends and Quackery," "The Outlook," "Tuberculosis and Poverty," "Regret or Happiness," are unusual titles and contain unusual subject matter. This book is distinctly different from any others that I have reviewed and I rank it high among such volumes.

The only criticism I would make is the one which applies to a similar book of Dr. Lawrason Brown's, namely, that it takes for granted a high degree of intelligence on the part of the patient. It may be that the patients in the West and in the South have more brains than those in the East, or what is more likely the case, that the patients who are willing and able to make such a sacrifice involved by a trip to the State of Texas or the far West must be fairly well up in the social and intelligence scale. Be that as it may, I found Dr. Potts' book distinctly solid reading requiring a good deal of hard thinking, and I know that many of my patients would have great difficulty in absorbing all that it contains. I would almost look upon this book as one intended for physicians, particularly students and general practitioners, rather than for patients; but the unusual patient, however, will find this volume stimulating and of very real interest.

Textbook of Histology. By FREDERIC T. LEWIS and J. L. BREMER. Third edition, 1927, pp. 552. Philadelphia: P. Lakeston's Son & Co.

This volume is a revision of the second edition of Lewis and Stohr's textbook of histology, and it is based on the fifteenth German edition of Stohr's Histology. The embryological approach used in this textbook is of very definite value both to the student and to all interested in histology. There is no volume dealing with histology which so adequately gives the embryological aspects of the various tissues and organisms as does this book. The illustrations are excellent.

A number of references to recent literature giving American journals the preference have been added, and the modern state of knowledge of this field has been very fully summarized.

The chapter on the nervous system has been restricted to the fundamental aspects and the detailed histology has been omitted here as there are so many special textbooks in the field of neurological anatomy there is little call for its inclusion in a general text.

Gonococcal Infection in the Male. By ABRAHAM L. WOLBARST, M.D., Urologist and Director of Urological Clinics, Beth Israel Hospital, etc. St. Louis: C. V. Mosby Company. 237 pages. Price, $5.00.

Because of the prevalence of gonorrhea and the frequency with which a past history of the disease is obtained in patients presenting themselves for examination, every physician and student should be familiar with its fundamentals. Dr. Wolbarst's short book gives very clearly, simple diagnostic and therapeutic measures, as well as the more technically difficult procedures which should be reserved for the trained urologist. The more promising of the newer methods of treatment are considered. We are glad to endorse a book so full of sound common sense.

Textbook of Pathology. By FRANCIS DELAFIELD and T. MITCHELL PRUDDEN. Revised by Francis Carter Wood, 1927. 14th Edition, pp. 1253. New York: William Wood & Co.

This edition does not differ materially from the last. Delafield and Prudden is so standard a textbook that it requires no introduction to those familiar with pathological work. A number of recent references have been added to those fields in which recent advances have been made. The illustrations are very satisfactory and serve to emphasize important points. There is a particularly good series of pathological lesions in the pancreas.

There are some portions of the book which have apparently escaped revision such as referring to pressure atrophy of the liver as due to the "ordinary conditions of modern life". In the course of the discussion of hemachromatosis no mention is made of Mallory's very complete work in this field. A chapter on tumor of bone is completely in accord with our present conceptions of this important condition.

A useful feature of the book to students and to those physicians who may be forced, on occasion, to perform their own autopsies is a very good section on methods of postmortem examination containing a number of clear illustrations.

An Introductory Course in Ophthalmic Optics. By ALFRED COWAN, M.D.; 262 pages, with 121 illustrations, many in colors. Published by F. A. Davis Company, Philadelphia, 1927. Price $3.50.

Dr. Cowan, Assistant Professor in Ophthalmology in the Graduate School of Medicine, University of Pennsylvania, has produced a book that is designed to meet the immediate requirements of "the average (and very much preoccupied) student of ophthalmology". In giving forth this work he has filled a long-standing gap in the propaedeutic literature of this branch of medicine. He offers, even though he does not say so, a rapid-transit induction into ophthalmic optics to all who can pay the fare of an elementary knowledge of mathematics (which includes trigonometry!). He dares to hope he has succeeded; in the opinion of the reviewer he has.

The presentation of the subject is very methodical. After brief introductory remarks about light and light-transmitting media, the author proceeds at once to the fundamental laws of refraction and reflection. Lenses and lens-action are competently discussed, and a climax is reached in the chapter on the Dioptric System of the Eye, wherein many of the principles explained in earlier chapters are summated, as it were, in the compound optical system of human vision. Then follow chapters on the optical aspects of refractive errors and accommodation, an apposite chapter on apertures and diffusion images, and finally a chapter on the optics of ophthalmoscopy and retinoscopy. Reference is facilitated by an unstinted index of twelve double-column pages. Special attention is given throughout to graphic illustration, and numerous diagrams are rendered perspicuous by the use of color.

In carrying out his expressed purpose of constructing a system which is scientifically correct Dr. Cowan has very wisely not rejected the familiar *natural* and *descriptive* convention of signs for the *geometrical* convention which is in favor among theoretic students of optics. Particularly commendable also is the author's way of presenting spherical aberration at the very outset of his discussion of reflection at spherical surfaces, whereby it is duly impressed upon the student that such aberration is inherent and normal in all simple spherical optical systems, and that the law of conjugate foci is no more than an approximation, valid only for paraxial rays where the aberration is so slight as to be negligible.

It would be a sign of greed to say that Dr. Cowan has not provided us with enough. Nevertheless we could wish that he had told more about "corrected and precision lenses" and had said something about the optics of the ideal bifocal. The student needs some criterion for evaluating what he reads on the advertising pages of his Journals. A greater abundance of examples and problems than the author has given would very likely hasten rather than retard the progress of the student through the book. Brief bibliographies might also have been provided at the end of each chapter, not of works upon which the author has himself drawn but to which the curious student might like to have his steps directed.

There is little in the book to which one could wish to take exception. The statement that "the angle formed by the optical axis and the visual line is called the angle alpha" is most certainly true, but Landolt has taken care to show that the zealot for historical accuracy is going to reserve this title of primacy for the juncture of another pair of lines. At any rate Dr. Cowan calls due attention to the more workaday angle much further down the Greek alphabet, the angle kappa, which is generally measured in perimetry.

This "Introductory Course in Ophthalmic Optics" will make many an old refractionist regret that there was nothing similar at hand when he first exercised his faculties on the trial case. It is not too late for such even now to submit gratefully to the tuition of Dr. Cowan.

The Normal Diet. By W. D. SANSUM. C. N. Mosby Company, St. Louis. 1927. Price, $1.50.

This small book, which now appears in its second edition, is "a simple statement of the fundamental principles of diet for the mutual use of physicians and patients." It consists of explanatory chapters on the anatomy and physiology of the digestive system, various types of acidosis, and the caloric, protein, mineral, vitamin, and water requirements of the body. With some of the chapters, the meals of ten days are given to illustrate normal, basic, and safe reducing diets.

On the whole, the book gives a great deal of fundamental information about normal nutrition. The section describing the passage of the aliment through the digestive system and the abuse of cathartics and enemata are especially illuminating. Too much stress has been placed on the desirability of eating fruits. The daily consumption of ordinary servings of baked apple, grapes, fruit salad, honeydew melon, cluster of raisins, apricot charlotte, and three glasses of orange juice would have a stimulating effect on the bowels as severe as that of a cathartic. The daily protein requirement of the average adult is estimated at 80 to 100 grams, the fat about 100 grams, and the carbohydrate at about 200 grams. With these, the necessity for the vitamins and essential salts is given reasonable consideration.

A Text-Book of Therapeutics, Including the Essentials of Pharmacology and Materia Medica. By ARTHUR A. STEVENS, M.D., Professor of Applied Therapeutics in the University of Pennsylvania. Seventh Edition, Entirely Reset. Philadelphia and London: W. B. Saunders Company. 1927.

This book fills a useful place in practical medical literature, in that it occupies a position intermediate between those of the more exhaustive text books of pharmacology and of the more condensed, and usually inadequate, manuals. It is composed mainly—or for 491 of its 703 pages—of a consideration of drugs. For each of these, from Digitalis to Mel (honey), is given a summary of the pharmacology and pharmacologic action, according to the importance of the drug, and a more extensive discussion of the practical therapeutic uses. Next there is a brief section on Remedial Measures Other Than Drugs, from electricity and massage to heliotherapy. Finally, there is a section entitled Applied Therapeutics, giving in condensed form the essentials of treatment in particular diseases, from typhoid fever to seborrhea. The present edition includes such new drugs as ephedrine, novasurol, and many others. The work can be recommended as both reliable and well adapted to ready reference by the practicing physician.

The Surgical Clinics of North America. August, 1927. Vol. 7, No. 4. Philadelphia: W. B. Saunders Company. 314 pages.

This volume of surgical clinics is from the Brooklyn Hospital. There are thirty-seven articles representing a wide variety of surgical subjects in which there has been a successful attempt to avoid both the matters that have received much recent discussion on the one hand and mere curiosities on the other. This collection is so well balanced that it would be unfair to select any particular article for special comment. Each subject is clearly presented and contains suggestions of practical value.

Actinotherapy for General Practitioners. By H. G. FALKNER. Pub., William Wood & Company, New York. Price $3.00.

This small volume of 150 pages is written by an ardent and enthusiastic advocate of artificial sunlight in the way of ultra-violet rays as a cure for practically all the known ills of which man is subject. A large portion of the book is devoted to the technical and mechanical details of the various lamps and their methods of producing the various rays as well as to the technique of administering treatment. He then discusses the therapeutic uses of ultra-violet light in skin diseases for which as far as I can make out it is a universal panacea and will cure or at least relieve in every case.

He then takes up the effects of actinotherapy in rickets, rheumatism and diseases of the nervous system under which he includes sciatica and chorea. Indeed he goes so far as to report wonderful improvement in a case of anterior poliomyelitis. Likewise, in tuberculosis, he recommends it and in almost every instance in diseases of the respiratory system, —whooping cough, common colds, asthma, bronchitis and hay fever,—and in diseases of the nose, mouth and throat, notably tonsillitis, he finds treatment with the ultra-violet rays an invaluable means of cure or relief, and finally, in diseases of the genito-urinary system, the circulatory system, blood and ductless glands, and of the eye, this wonderful remedy is of never-failing value.

The writer of this book goes to such absurd extremes in his claims that it is hard to take what he says seriously. Such a book as this will certainly do no good to the cause of real heliotherapy and it is hoped that those who wish to use ultra-violet therapy and who are using it will not be guided in their course of treatment by the rules laid down in this volume.

A Text-Book of Psychiatry, for Students and Practitioners. By D. K. HENDERSON, M.D., F.R.F.P.S., and R. D. GILLESPIE, M.D., D.P.M. Published by Humphrey Milford, Oxford University Press, 1927.

This valuable addition to the list of text-books on Psychiatry is noteworthy for several different reasons. Although written by two Englishmen and published by the Oxford University Press, it is based to a large degree on material gathered by these gentlemen while serving in hospitals in the United States. It utilizes to some extent the "case system" which has been found to be of great value in teaching in law schools and in some of the other specialties in medicine. It is dedicated to Adolf Meyer, under whom the writers worked, and it is permeated by the teachings and influence of this potent leader of psychiatry in America. This influence is shown in the chapter on Classification wherein after giving the standard British and American schemes of classification, a modified scheme is presented prefaced with this statement: "But, fortunately, it is not diagnosis that matters, but the understanding of the disorder, and of the patient who suffers from it—under what circumstances it arose, how it is related to the patient's normal condition, what the disorder means, what light is shed on his problems, and what can be done to help towards a favorable outcome. In Adolf Meyer's words, it is not the patients we are to sort out, but the facts." This influence again appears when the various classes of mental disease are considered not as diseases or psychoses but as reaction types.

To the student or practitioner, looking for a well written, well arranged, non-voluminous, text-book of psychiatry, this book is recommended with enthusiasm.

Diseases of the New Born. By JAMES BURNET. Oxford University Press.

This book on the Diseases of the New Born is the first of its kind to appear from the English Press. It represents an attempt on the part of the author to give, particularly to medical students and practitioners, an available text book on the various conditions which occur in early life. It is a small book of 275 pages and devotes the introductory chapters to the anatomy and physiology peculiar to this period of life. The remainder of the work gives a very concise, orderly and clear exposition of essentially all the pathological conditions of the New Born with a final chapter on the premature infant. It contains no bibliography. The style and method of presentation are particularly adapted to give medical students an excellent introduction to the subject. Clinical differences of opinion are avoided and the more accepted views expressed The book is to be heartily recommended.

BOOKS RECEIVED FOR REVIEW

Studies from the Rockefeller Institute for Medical Research. Vol. LXII. New York: Rockefeller Institute for Medical Research. 613 pages.

The Meningiomas. By Harvey Cushing. Glasgow: Jackson, Wylie & Co. 53 pages. Price, 2/6.

International Clinics. Vol. IV. Philadelphia: J. B. Lippincott Co. 309 pages.

Die Spektrochemische Analyse Naturlicher Organischer Farbstoffe. By Otto Schumm. Jena: Verlag von Gustaf Fischer. 290 pages.